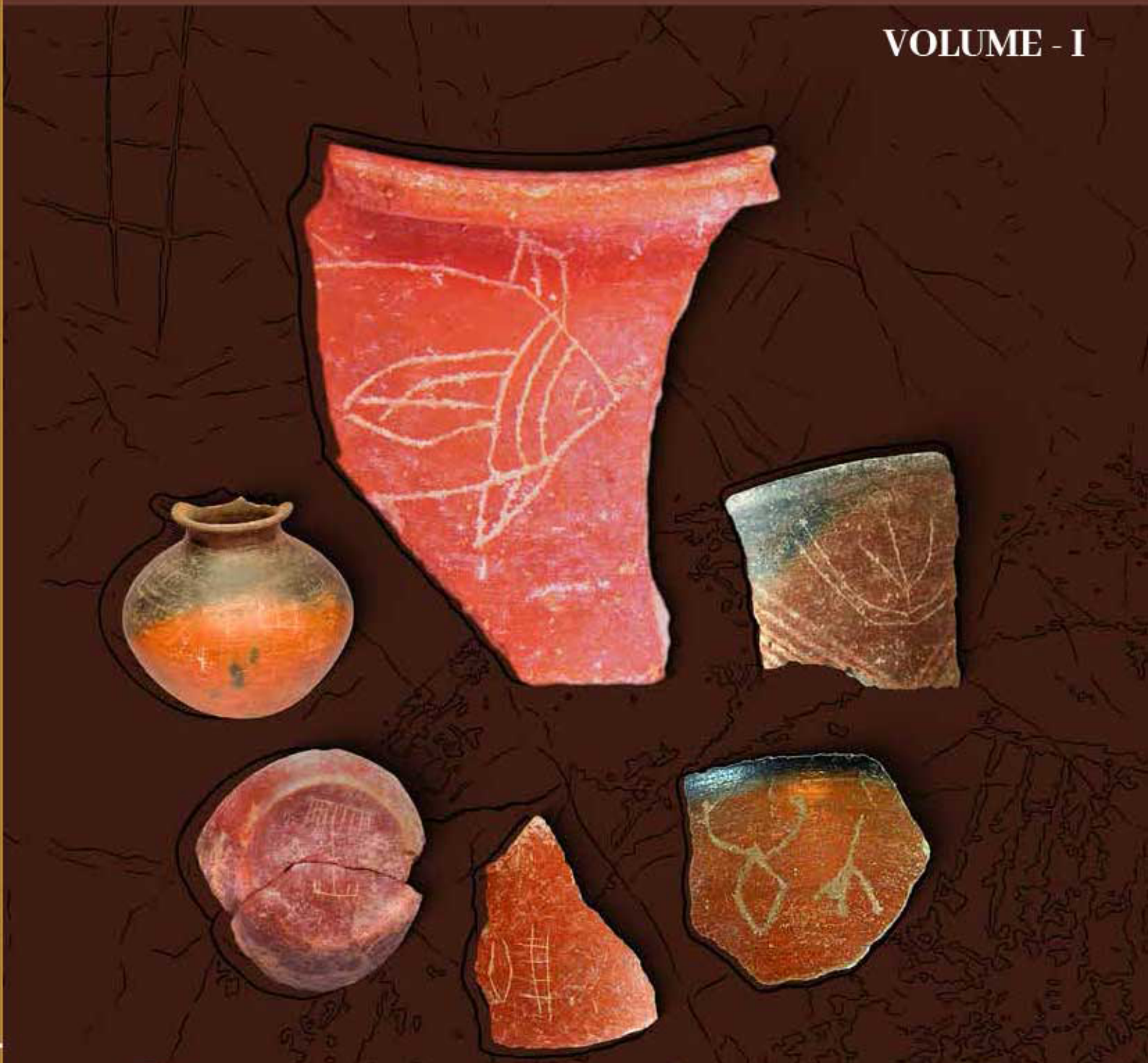
INSCRIBED POTSHERDS OF TAMIL NADU

Graffiti and Tamiḻi

VOLUME - I



GOVERNMENT OF TAMIL NADU
DEPARTMENT OF ARCHAEOLOGY

Inscribed Potsherds of Tamil Nadu
Graffiti and Tamiḻi

VOLUME - I

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Department of Archaeology

Government of Tamil Nadu

2026

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Thiru Thangam Thenarasu
Honourable Minister for Finance
Environment, Climate Change and Archaeology

Foreword

One of the earliest civilisations of the world is the Indus Valley Civilization followed in a wider geographical area when compared with other contemporary civilizations. The seals, sealings, advanced metallurgy in copper and bronze, gemstone technology, ceramic technology, well-structured town planning, monumental architecture, dockyard, standardized weights, trans-oceanic international trade, underground drainage system, subterranean canals displaying excellent water harvesting system, diversified agricultural activities, domestication of cattle, usage of script, boat building technology, resource mobilization, well-structured administrative system and firm state regulations are some of the hallmarks of Indus Valley Civilization. Multifaceted accomplishments attained by the Harappan people were reconstructed based on material evidences. The non-decipherment of the Indus script prevents us from understanding their language and script, thwarting our effort to understand the social, cultural, political and economic life of the Indus people. Understanding the evolution and transformation of the Indus writing system still eludes scholars and serious attempts to decipher the script are still going on at various levels. Besides the linguistic attempts, the comparative study of the Indus script with graffiti marks is one of the major works that provides some clues on the nature of the script. The long survival of graffiti marks on different media, both in time and space and their survival as parallel systems started receiving the attention of scholars. The visible morphological evidence shows the relationship between the Indus script and Graffiti marks. In the book, an attempt is made to compare the graffiti marks encountered in archaeological excavations of Tamil Nadu with the Indus script. The occurrence of more than 15000 graffiti inscribed potsherds collected from the entire Tamil Nadu is proof of the survival of the Indus script in one form or another. The preliminary morphological analysis of these marks clearly indicates that these are not merely unintentional marks rather there must be a specific meaning to them. The comparative study made with the Indus script indicates a close resemblance.

The authors also made an earnest attempt to document the entire corpus of Tamili inscribed potsherds. The documentation of more than 1500 inscribed potsherds from 42 archaeological sites is a herculean task. The findings are placed before the scholars for academic scrutiny. Now,

scholars have the opportunity to discuss and critically examine the findings and to arrive at their own scholarly conclusions without any prejudice.

I congratulate all the scholars and researchers involved in the project and, importantly, the authors Prof. K.Rajan and Dr. R.Sivanantham, who compiled entire pieces of evidence scattered throughout Tamil Nadu and meticulously placing before the scholarly world that may open a new path in the study of Indus and Tamili writing systems.

Thiru T. Udhayachandran, I.A.S.
Additional Chief Secretary to the Government of Tamil Nadu
Finance Department and Commissioner of Archaeology

Foreword

The book *Inscribed Potsherds of Tamil Nadu - Graffiti and Tamili* is the outcome of the scholarly work carried out on the early inscribed potsherds of Tamil Nadu, namely graffiti and Tamili. Graffiti signs are considered as one of the early writing systems and attempts have been made to understand the language that stands behind these signs. The similarity between the Indus scripts and graffiti marks further accelerated the study. The non-decipherment of Indus graffiti signs led to intense debate in identifying the language family. The serious efforts made by archaeologists and linguists have failed to provide a satisfactory answer to the language of the Indus people. The forceful and purposeful intellectual discourse and debate paved the way to associate the language of the Indus with Proto-Dravidian, Dravidian, Aryan, Non-Aryan and other language families. The majority of studies point to the Dravidian or proto-Dravidian language. The scholars felt that one of the clues that lies in opening the secret of the language is the graffiti marks. The similarity between the graffiti and Indus signs further induced the curiosity. However, the insufficient data hindered further progress. The Tamil Nadu State Department of Archaeology felt that it was necessary to provide and feed with more tangible data so that archaeologists and linguists could move closer to decipherment. The graffiti marks profusely engraved on the surface of the pot are considered as one of the significant data to unravel the mystery of the Harappan language. Therefore, the Department took the massive task of documenting the entire graffiti-bearing potsherds so far encountered in archaeological excavations of Tamil Nadu. More than fifteen thousand graffiti-bearing potsherds were meticulously documented and placed before the scholarly world for their academic scrutiny. The results are now in your hands. The visual presentation of those signs with excellent and exceptional illustrations may give an opportunity to unravel the mystery of the Indus scripts and Graffiti marks.

Another intellectual discourse of the book is the origin, evolution and transformation of the Tamili script. All the Tamili inscribed potsherds so far encountered in archaeological excavations of Tamil Nadu have been meticulously documented and presented in the book. More than 1500

inscribed potsherds, the highest number ever found in any part of India, were documented and interpreted. The debate on the chronology of the Tamili script has been put to rest by providing more than seventy AMS dates collected from different sites and contexts. We strongly and faithfully believe that the present book will accelerate the intellectual discourse and further their research in the field of early language and script of India.

I congratulate the authors, Prof.K.Rajan and Dr.R.Sivanantham, and their team for the painstaking efforts and effective coordination in giving a constructive shape to the work. I do hope the book will generate sufficient debate and discussion to arrive at a concrete conclusion for the benefit of the nation.

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Note: The first eight members are core members of the Graffiti Project. The remaining members are working under the project Archaeological and Historical Atlas of Tamil Nadu and they were immensely involved in the Graffiti Project and contributed substantially in shaping the outcome of the present work.

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Preface

India witnessed three major early writing systems namely the Indus writing system, the graffiti writing system and the Brāhmī writing system covering a broader chronological space of about three thousand years between the third millennium BCE and the first century BCE. Among the three, the last-mentioned Tamiḻi (Tamiḻ-Brāhmī/Damiḻi) and Prakrit-Brāhmī writing system was satisfactorily deciphered whereas the previous two writing systems are yet to be deciphered. The Indus writing system is the one followed in a wider geographical area. Understanding the appearance and disappearance of this well-established Indus writing system still eludes scholars due to the non-decipherment of the Indus script. The second writing system popularly called graffiti marks is encountered in the Chalcolithic and Iron Age cultural contexts occupying a wider geographical space in central and Peninsular India. The long survival of graffiti marks, contemporary to the Indus Valley Civilization, started receiving the attention of scholars. Its presence in the Indus Valley and its subsequent survival till Early Historic times raised an important question, whether the graffiti system survived as a parallel system along with a well-developed dominant Indus writing system is yet to be understood in a given cultural context. Limited evidence, non-availability of archaeological context and improper documentation still elude scholars in understanding the nature of graffiti marks. However, there is visible evidence to show the relationship between the Indus script and Graffiti marks. In the present work, an attempt is made to document all the graffiti marks encountered in Tamil Nadu and analyzed to understand the origin and transformation in the backdrop of stratigraphical, morphological, syntax and cultural contexts.

The recent AMS ^{14}C dates obtained at Sivagalai, Adichanallur, Mangadu and Mayiladumparai placed the beginning of the Iron Age to mid-third millennium BCE as contemporary to Harappan culture. These dates were further used to investigate the nature of graffiti marks. The modest documentation alone yielded more than fifteen thousand sherds from a hundred forty sites spread throughout Tamil Nadu. The morphological analysis of these marks clearly indicates that these are not merely unintentional marks rather there must be a specific meaning to them. The comparative study made with the Indus script indicates the close resemblance constituting nearly sixty percent of them. The total number of occurrences of graffiti, their distribution, ceramic preference, the position of their writing and their position in the Tamiḻi inscribed potsherds and the statistical data enumerated in relation to Tamiḻi inscribed potsherds clearly point to the significance of these graffiti marks. Though the exact meaning of these symbols, individually or in compound form, cannot be easily guessed, but, close observation of these symbols, their places of occurrence, frequency and position demonstrates that they were used to communicate certain messages and it is a kind of writing system. The documentation of graffiti-bearing sherds, preparation of the sign

table and concordance of the entire sherds may provide a clue for future decipherment. The decipherment of these marks may also help us to decipher the Indus script or *vice versa.* Faithful documentation in future is the only answer to these vexing issues.

Another ancient script that received much attention from scholars is the Tamil̲i script, popularly called Tamiḷ-Brāhmī. The decipherment of the script in association with contemporary Sangam literature through much light on the nature of the society that survived Early Historic times. The series of radiometric dates obtained particularly at Kodumanal, Porunthal, Keeladi and Sivagalai pushed the date of the Tamil̲i script to the 7th-6th century BCE. The evolved nature of the script suggests that this script might have developed well before this date. The origin, evolution and transformation of the script still elude the scholars due to limited data. A segment of scholars believes that this script might have evolved from the previously existing graffiti marks. There is a crucial link at both cultural and linguistic levels. However, the data on Tamil̲i is stored and preserved in various institutions is not readily available for their close study. In the present work, an earnest attempt is made to document more than a thousand five hundred Tamil̲i inscribed potsherds scattered all over Tamil Nadu. The consolidated data with proper documentation and interpretation is presented to the scholarly world for the furtherance of their research. These two types of inscribed potsherds, namely graffiti and Tamil̲i, presented here may help to advance the research in the field of the cultural, epigraphical, linguistic and historical arena to reconstruct the past in a most meaningful and respectful way.

Acknowledgements

We are greatly indebted to all the scholars, administrators, research scholars, enthusiasts, philanthropists and many explorers who immensely contributed by providing valuable guidance and data for the timely completion of the project work. It gives us immense pleasure to gratefully acknowledge and faithfully thank from the bottom of our hearts those who have unconditionally and enthusiastically helped in getting the data on graffiti and Damili to incorporate in the volume to get a meaningful perception. It is time to acknowledge the active and dedicated academic cooperation of various institutions and individuals. Each individual is thankfully acknowledged with great respect and reverence. We appreciate and acknowledge their marvellous and magnificent involvement at every stage of its progress.

The present work voluminous, stupendous and time-consuming work would have not seen the light of day without the financial and administrative support of Sri. Thangam Thennarasu, Hon'ble Minister for Finance, Environment, Climate Change and Archaeology, Sri. T. Udhayachandran IAS., Principal Secretary to the Government of Tamil Nadu, Finance Department and Commissioner of Archaeology and Dr. K.Manivasan IAS., Principal Secretary to Government of Tamil Nadu, Tourism, Culture, and Religious Endowments Department. We wholeheartedly thank them all.

We sincerely express our deepest gratitude to Mr. Yaduvir Singh Rawat, Director General of the Archaeological Survey of India, and Dr. Amarnath Ramakrishna, Director of the Archaeological Survey of India, for their gracious approval and generous permission to feature the unpublished Graffiti and Tamil-Brahmi inscribed potsherds from Keeladi in this publication. Their support has been instrumental in enriching the content of this work.

Special thanks are due to the Archaeological Survey of India, Government Museums, Madras University and Tamil University for providing permission to collect data and take photographs of the inscribed potsherds. A special heartfelt thanks to Dr. Amarnath Ramakrishna, the Director and the first excavator of Keeladi from ASI, who extended valuable cooperation and sustained support by providing the data of all unpublished inscribed potsherds that allowed us to provide the complete set of graffiti and Tamil̲i inscribed potsherds from Keeladi unearthed both by the Archaeological Survey of India and Tamil Nadu State Archaeology Department.

All Directors of Excavations, Archaeological Officers and individual scholars are always remaining a source of inspiration. Their dedicated work in the field brought to light several graffiti and Damili bearing potsherds which in turn helped to document and analyse fact-based historical data with dedication and accuracy. We followed the footsteps of such

scholars in achieving the desired goal. It is a source of great personal experience for us to interact with several individual scholars and field workers. We might have inadvertently utilized their precious knowledge in the present volumes. Their contribution is immense and immeasurable. We express our heartfelt gratitude to all of them.

Several articles, books and dissertations are examined to understand the nature of the data and also utilized their valuable data for improving the quality of the manuscripts. We thank them all for gracefully granting the permission.

Mr.M.Suresh, Archaeological Officer, TNSDA assisted in preparing the database and image plates of seals and graffiti-bearing potsherds of the Indus Valley Civilization. Mr. Elanthendral SR took the tedious task of going through the entire data-studded project report and providing insightful suggestions to improve the quality of the manuscript. Mr. Mullai Venthan K V K took the task of preparing AutoCAD drawings. We owe special thanks to him. Dr. V.P. Yathees Kumar, ASI, Dr. G. Muthu Sankar, French Institute of Pondicherry and Mr. R.Jeya Suriya are responsible for the wonderful production of GIS-based maps. Their commitment and devotion are appreciatively acknowledged.

Beyond, there are several institutions and individuals, as listed below, who are responsible for providing the data, images, line drawings and maps. The task would have not been accomplished and achieved without their active participation and dynamic cooperation. We are extremely thankful to them.

Courtesy and Special thanks

It gives us great pleasure to acknowledge and thank the Archaeological Survey of India (ASI), Tamil Nadu State Archaeology Department (TNSDA), Government Museums (MU), Madras University, Tamil University and several other institutions and individuals for permitting us to take photographs of the inscribed potsherds from their collection and to utilize them in the present work. We owe much to them. The list is prepared as per the alphabetical list of the archaeological sites. We also extend our gratitude and place on record our appreciation to those missed inadvertently in the list.

S.No	Site	Name	Position	Institution
1.	Adichanallur	T.Arun Raj and V.P.Yathees Kumar	Director and Assistant Superintending Archaeologists	ASI
2.	Adichanallur	J. Baskar	Archaeological Officer	TNSDA
3.	Alagankulam	J. Baskar	Archaeological Officer	TNSDA
4.	Anaikottai, Sri Lanka	P. Raghupathy	Assistant Professor	Jaffna University, Sri Lanka
5.	Andipatti	S.Vasanthi	Former Director	TNSDA
6.	Arikamedu	Mortimer Wheeler	Former Director General	ASI
7.	Arikamedu	Vimala Begley	Professor	Pennsylvania University, USA
8.	Ariyanatham	Veeraraghavan and Mangai Veeraraghavan	Freelance Explorers	Villupuram
9.	Berenice, Egypt	Steven Sidebotham	Professor	Delaware University, USA
10.	Boluvampatti	S. Selvaraj	Archaeological Officer	TNSDA
11.	Dharmanallur	J.R.Sivaramakrishnan	Assistant Professor	Annamalai University, Annamalai Nagar
12.	Kaddukkaraikulam	Paramu. Pushparatnam	Professor	Jaffna University, Sri Lanka
13.	Kanchipuram	K.V.Raman	Professor	Madras University, Chennai

S.No	Site	Name	Position	Institution
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16.	Karur	K.Sridharan	Archaeological Officer	TNSDA
17.	Karur	Alakkudi Seetharaman	Coin collector	Thanjavur
18.	Kaveripattinam	S.Rajavelu	Professor	Tamil University, Thanjavur
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20.	Keeladi	R. Ajay Kumar	Archaeological Officer	TNSDA
21.	Keeladi	M. Ramesh	Archaeological Officer	TNSDA
22.	Keeladi	M. Suresh	Archaeological Officer	TNSDA
23.	Keeladi	Amarnath Ramakrishna	Director	ASI
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25.	Khor Rori	Alessandra Avanzini	Professor	University of Pisa, Italy
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32.	Kongalnagaram	Sadasivam	Freelance Explorer	Gudimallam
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34.	Korkai	R. Nagasamy	Former Director	TNSDA
35.	Korkai	T. Thangadurai	Archaeological Officer	TNSDA
36.	Kothamangalam	Chandra Bose	Assistant Professor	H.H. The Rajah's College, Pudukkottai
37.	Mangudi	C. Santhalingam	Archaeological Officer	TNSDA

S.No	Site	Name	Position	Institution
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41.	Mayiladumparai	S. Paranthaman	Archaeological Officer	TNSDA
42.	Nedungur	Naga. Ganesan	Archaeological Officer	TNSDA
43.	Parikal Natham	Veeraraghavan and Mangai Veeraraghavan	Freelance Explorers	Villuppuram
44.	Pattanam	P.J.Cherian	Former Director	Kerala Council of Historical Research
45.	Pattaraiperumpudur	J. Baskar	Archaeological Officer	TNSDA
46.	Periya Thadagam	S. Ravi	Professor	Central University, Tamil Nadu
47.	Perumbalai	S. Paranthaman	Archaeological Officer	TNSDA
48.	Phu Khao Thong, Thailand	Iravatham Mahadevan	Emeritus Professor	RMRL
49.	Porpanaikottai	Thangadurai	Archaeological Officer	TNSDA
50.	Pumpuhar	Natana. Kasinathan	Former Director	TNSDA
51.	Sendamangalam	T.Subramanian	Archaeological Officer	TNSDA
52.	Sivagalai	M. Prabhakaran	Archaeological Officer	TNSDA
53.	Teriruveli	S.Vasanthi	Former Director	TNSDA
54.	Thamaraikulam	V.P.Yathees Kumar	Assistant Superintending Archaeologists	ASI
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64.	Quesir al Qadim, Egypt	Steven Sidebotham	Professor	University of Delaware, USA

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Note on Diacritical Marks

The scheme of transliteration used in this book is given below. All the place names are phonetically transcribed. While writing place names, the present familiar forms of pronunciation are generally adopted to overcome the regional variation. The following is the system of phonetic transcription.

Ā / ā	**ஆ**
Ī / ī	**ஈ**
Ū / ū	**ஊ**
Ē / ē	**ஏ**
Ō / ō	**ஓ**
k / g	**க்**
ṅ	**ங்**
c / ch	**ச்**
ñ	**ஞ்**
ṭ / ḍ	**ட்**
ṇ	**ண்**
t / th / d / dh	**த்**
p / b	**ப்**
i / y	**ய்**
ḷ	**ள்**
l̲	**ழ்**
r̲	**ற்**
n̲	**ன்**

Abbreviations

Ad	:	Allahdino
ADC	:	Adichanallur
aDNA	:	Ancient Deoxyribonucleic acid
AGM	:	Alagankulam
Agr	:	Alamgirpur
Ai	:	Amri
AMS	:	Accelerated Mass Spectrometry
ARE	:	Annual Report on Indian Epigraphy
ARE	:	Annual Report on Epigraphy
ARM	:	Ariya Natham
ASI	:	Archaeological Survey of India
B	:	Banawali
BCE	:	Before Common Era
Beta	:	Beta Analytic Inc.
Blk	:	Bala-kot
BRW	:	Black and Red Ware
BSIP	:	Birbal Sahni Institute of Palaeosciences
BSW	:	Black slipped ware
Btl	:	Balathal
BVP	:	Boluvampatti
BW	:	Black Ware
C	:	Chanhujo-daro/Chanhu-daro
CE	:	Common Era
Ch	:	Chandigarh
CRW	:	Coarse Red Ware
Da	:	Dauda-damp
Dlp	:	Desalpur
Dlv	:	Dholavira
Dmd	:	Daimabad
EI	:	Epigraphia Indica
G	:	Gumla
GIS	:	Geographical Information System

Gld : Gilund
GPR : Ground Penetrating Radar
Grb : Gharo Bhiro
GW : Grey Ware
H : Harappa
Hd : Hissam-dheri
Hls : Hulas
IAR : Indian Archaeology – A Review
IPS : Inscriptions of Pudukkottai State
IUAC : Inter-University Accelerator Centre
IVC : Indus Valley Civilization
Jk : Jhukar
K : Kalibangan
KCM : Kanchipuram
Kd : Kot-Diji
KDL : Kodumanal
KDU : Karaikadu
Kl : Kalako-deray
KLD : Keeladi
KMD : Kilnamandi
KML : Kodumanal
KNM : Kongalnagaram
KRK : Korkai
KRR : Karur
Krs : Khirsara
KTM : Koththamangalam
KVP : Kaveripattinam
L : Lothal
L : Loebanr
Lh : Lohumjo-daro
LiDAR : Light Detection and Ranging
Lwn : Lewan-dheri
M : Mohenjo-daro
MEG : Megalith

MGD : Mangudi
Mgk : Mudigak
MGM : Mangulam
MKM : Mathakam
MPI : Mayiladumparai
Mr : Mehrgarh
Msk : Maski
NBPW : Northern black polished ware
Nd : Nindowari-damb
NDR : Nedungur
Ns : Nausharo
Nwd : Naru-Waro-dharo
OSL : Optically Stimulated Luminescence
PBI : Perumbalai
Pbm : Pabumath
Pbs : Prabhas Patan
Pg : Periano-ghundai
Pk : Pirak
PKI : Porpanaikottai
PKM : Parikal Natham
PMC : Punch Marked Coin
PMR : Pumpuhar
PRL : Physical Research Laboratory
PRR : Pattaraiperumpudur
PSG : PSG Arts and Science College Museum, Coimbatore
PU : Pondicherry University
PWD : Public Works Department
RCBRW : Russet coated black-and-red ware
RCW : Russet Coated Ware
Rgp : Rangpur
Rgr : Rakhigarhi
Rhd : Rahman-dheri
Rhr : Rohira
Rjd : Rogdi

Rpr	:	Rupar
RSW	:	Red Slipped Ware
RW	:	Red Ware
Sb	:	Sibri-damb
SGI	:	Sivagalai
Sht	:	Shahi-tump
SII	:	South Indian Inscriptions
SiS	:	Shar-i-Sokhta
Skh	:	Sarai Khola
Sktd	:	Surkotada
SMM	:	Sendamangalam
TB	:	Tamil-Brahmi
TGP	:	Turquoise Glassed Pottery
TIV	:	Teriruveli
TKP	:	Thulukarpatti
TKR	:	Tirukovilur
Tkwd	:	Tarkhanewala-dera
TN	:	Tamil Nadu
TNSDA	:	Tamil Nadu State Department of Archaeology
Trq	:	Taraki Qila
TU	:	Tamil University
TU-PU	:	Tamil University and Pondicherry University
URY	:	Uraiyur
V-AGM	:	Vallanadu Agaram
VLM	:	Vallam
VLS	:	Valasai
XRF	:	X-ray Fluorescence Analysis

Chapter-1

INTRODUCTION

INTRODUCTION

The human appearance on Indian soil goes back to 1.5 mya as the evidence emerged in the Stone Age Acheulian sites at Attirampakkam in Tamil Nadu and Tikoda in Madhya Pradesh (Pappu *et.al*., 2011:1596-1599; Ota *et.al.,* 2014:57-66; Singh 2018:169-241). Since then, our ancestors must have followed a kind of communication between their kin which might have developed into a language over time. The occurrence of Palaeolithic tools in different parts of India and on a few occasions at close proximity suggests that the Stone Age people such as the Lower Palaeolithic, Middle Palaeolithic, Upper Palaeolithic and Mesolithic people, might have developed a kind of system of communicating their thoughts to their fellow humans with ease. The identical lithic technology suggests that communication is necessary to transfer the lithic technology within and across the communities, besides visual observations. The visual representations of rock art found throughout India are to be considered a kind of visual communication system. As long as the subsistence pattern or livelihood was restricted to food gathering, the need for developing communication across various societies might have been limited to small social groups or bands. When they moved from food gathering to the food production stage during Neolithic times, the necessity to have a communicative system that transcended a wider area became necessary. The surplus food production led to population growth, and the demand of the society beyond food necessitated a kind of barter exchange system, leading to further interactions and integrations of the society. The evidences of terrace cultivation, circular huts, pit-dwellings, ash mounds, polishing grooves, rock art and domestication of cattle and pet animals reflect the emergence of a Neolithic society. The congregation of a larger community at one place for cultural, social, economic or ritual purposes, as reflected in rock paintings, would have slowly codified the language for effective communication. The growth of the economy and exchange led to the creation of a standardized script or a writing system. A kind of script akin to the Indus script found in the rock paintings at Kilvalai suggests the existence of a communicative system (Fig. 1.1).

The available limited data in India fails to give any continuity of the script from the day of its emergence to its transformation. The emergence of a writing system in India is yet to be understood in clear terms due to the limited nature of the data. In all probability, an effective communication system would have emerged during Neolithic times. The occurrence of a large number of graffiti marks in Copper Age (Chalcolithic period) and Iron Age sites suggests a kind of script, though undeciphered, established during this period around the 3rd millennium BCE. The occurrence of standardized signs on seals, sealings, potsherds and other artefacts in the Indus Valley Civilization (IVC) in the mid-part of the 3rd

Fig. 1.1. Kilvalai rock paintings with script akin to the Indus script

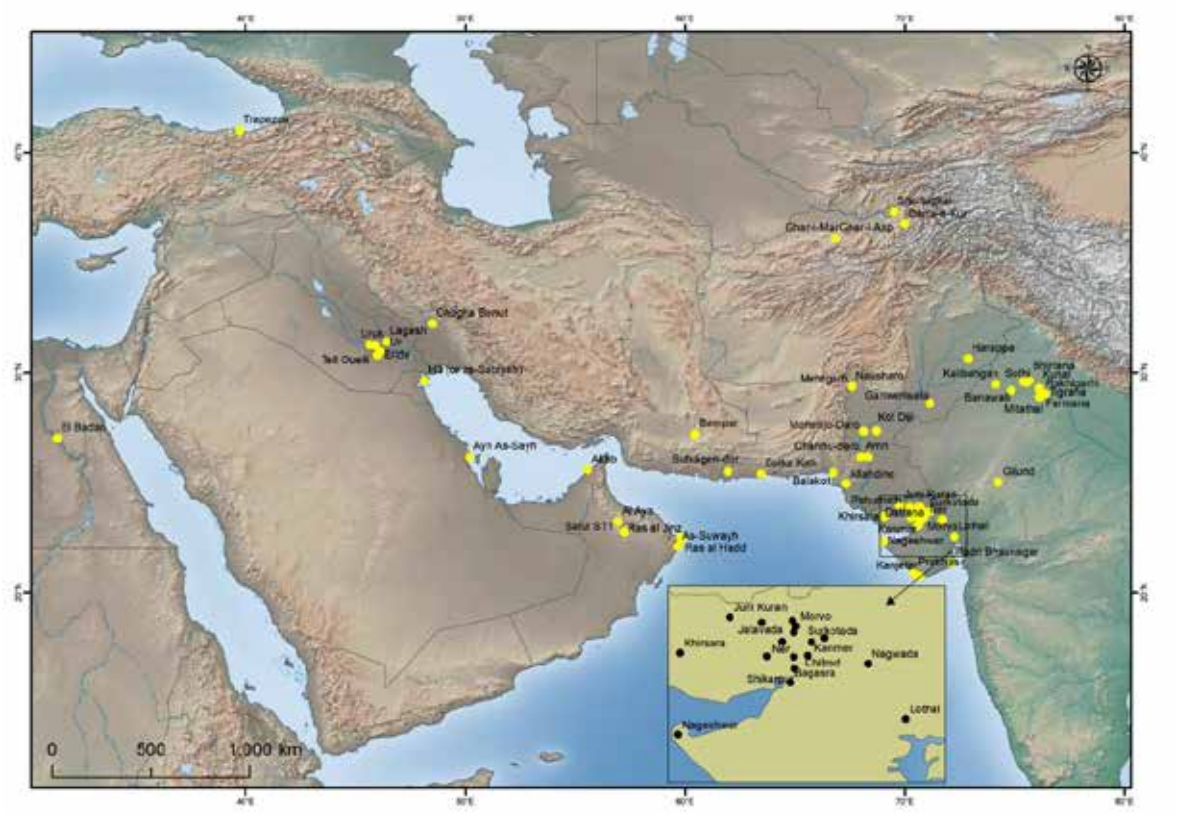


Fig. 1.2. Indus Valley Civilization sites

millennium BCE covering a wider geographical area indicates a kind of standardized script established in the Indus Valley (Fig. 1.2). However, the evolutionary or formative stage of the Indus script is still missing. All we knew was that the well-developed Indus signs were uniformly practised throughout the Indus valley for more than a millennium from the mid-3rd millennium BCE to mid-2nd millennium BCE. How much time it has taken to evolve as a script, subsequent standardization and its spread throughout the Indus Valley are yet to be decided. However, the penetration of the script covering a wider geographical area and acceptance by different segments of society suggests that the scripts were standardized with a kind of institutional support and scholarly effort. There are hardly any major morphological variations in the Indus signs indirectly conveying its rigidness or a kind of standardization. The non-availability of the co-script or bi-script still eludes the Indus script decipherment, leading to the emergence of several claims and hypotheses. The recent emerging evidence points to the existence of similar signs in the Iron Age cultural context of South India. The recent AMS dates of 2500 BCE-3000 BCE assigned to iron at Sivagalai, Mayiladumparai, Thelunganur and Mangadu suggest that the Iron Age of South India is contemporary to the Indus Valley Civilization (Park *et.al.* 1019:1-13; Rajan *et.al.* 2017:52-59; 2024). It seems a kind of communication system is well-established and a kind of signs/scripts were

standardized in India. The limited documentation of the graffiti marks in South India crossed with several thousand specimens and in Tamil Nadu alone, more than 15,000 graffiti-bearing potsherds were identified and documented.

The existing data suggests that there are three major early writing systems, namely the Indus writing system, the graffiti writing system and the Brahmi/Tamil̲i writing systems, that prevailed in India before the emergence of the Early Historic period around the 7th-6th century BCE.. Among the three, the first one is the well-known Indus writing system followed for more than a millennium between 2800 BCE and 1500 BCE, covering a wider area of the Indus valley, the Ghaggar-Hakra valley, the Kutch and the Saurashtra regions of Gujarat (Kenoyer 2010:106-122). More than 4000 objects carrying the Indus script have been found on different media such as steatite, faience and metal seals, clay seal impressions, pots and potsherds, copper plates, incised shells, ivory cones and rods, stone and metal bangles, copper weapons and stones. It is estimated that they carry around 400-450 signs, and the average number of symbols found on a seal is four to five, and the maximum number of signs engraved on a seal is 17[1]. Several seals were reported outside the Indus domain particularly in Mesopotamia, Dilmun and Magan (Iraq, Bahrain and Oman) along with Harappan artefacts of trade value, such as beads of carnelian, agate and steatite, copper ingots, ivory objects, weights and many other items (Vidale and Frenez 2015:144-154; Frenez 2016:107-124). Irrespective of the occurrence of a large number of artefacts in Mesopotamia, there is hardly any Mesopotamian material found in the Indus valley except the solitary example of the Persian Gulf seal, the round seal with gazelles and a dragon, collected from the surface of the Lothal mound (Rao 1979:312-313). Notwithstanding the long trade contacts with the Mesopotamian world, there are hardly any cuneiform writings in India, nor are there any bi-script (cuneiform and Indus scripts) seals or sealings. The non-availability of the bi-script objects, neither in Indus nor in Mesopotamia, made it difficult to decipher the Indus script. The painstaking methodological approaches carried out by scholars such as Hunter, Gregory Possehl, Asko Parpola, Iravatham Mahadevan, Koskenniemi and Parpola, Wells and Fuls, Bahata, and others (Hunter 1934; Possehl 1996; Parpola 1982; Mahadevan 1977, 1978: 34-42, 1986:15-30, 2014; Koskenniemi and Parpola 1982; Wells and Fuls 2006, Wells 2011, 2015, Bahata 2019:1-37; 2023:1-38) provided valuable clues on various intricacies involved in the structure of the sign. Bahata (2023), in her latest article, challenges various existing scholarly speculations. She negated the popular notions that Indus scripts are phonetically/logo-syllabically encoded toponyms and anthroponyms, and the numerals record quantities of commodities involved in specific commercial transactions. According to her, the Indus

1 According to some scholars, the total number of signs is 26. This claim refers to two isolated examples of seals M-494 and M-495 on which the signs are engraved on three separate faces of the five-faced seals (there are seven faces if one includes the sides) by considering them as a single text.

seals are used as revenue stamps, which possibly recorded names of taxed commodities, licensed crafts, tax rates, etc. These seals were nothing but licenses issued to tax collectors and/or merchants and artisans, which possibly recorded the licensed commercial activities through their obverse-side seal-like inscriptions and the license-fees/license-slabs through their reverse-side numerical-metrological expressions (Bahata 2023:1-38). She questioned the purpose or content of the seals and not the nature of the signs. Further research is required on these aspects to consolidate the findings. The absence of long sentences prevented us from getting a good picture of the nature of the Indus signs.

If one observes the later-day scripts such as Prākrit-Brāhmī, Tamiḻi (Tamiḻ-Brāhmī) or any other scripts of India, all the scripts show different stages of palaeographic evolution and morphological changes within a span of five hundred years. Surprisingly, the Indus script does not show such visible palaeographic or morphological changes, irrespective of its long existence over a millennium. The reason for its frozen state could not be understood. Probably, it was under the control of select ethnic/social groups or a state. There may be some regional variations within the language but the non-decipherment of the script prevents us from understanding the regional variations and local dialect. But the fact remains that the Indus script fails to demonstrate any regional variation in the script, or we fail to observe it. Unlike the later-day inscriptions and copper plates, the Indus writing system is witnessed mostly on seals with limited pictographs and scripts. Though the Indus seals and objects are recovered in far-off distances in countries such as Iran, Iraq, Bahrain and Oman, we hardly get any Indus artefacts in India beyond the Indus domain. It is claimed that the raw materials such as lapis lazuli, agate, chert, vesuvianite-grossular, alabaster, steatite, silver, copper, steatite and gold were procured by the artisans and traders of the Indus from different parts of Western India, Pakistan and Afghanistan (Law 2011). Like Prākrit-Brāhmī or Tamiḻ-Brāhmī scripts, the Indus script is also seen in a matured or well-evolved form, and leaving no room for understanding the origin and evolution of the script. Irrespective of the large number of excavated sites of Harappan times, one could hardly see the traces of different stages of evolution and transformation of the Indus script.

Thus, the scholars are tracing the link of the missing link through material evidence, literature and linguistic patterns. One such link is the graffiti marks, probably the second writing system of India, developed from the Indus script or having an independent origin. Unlike the Indus script, the usage of graffiti marks is witnessed in the Indus, central Chalcolithic, Iron Age and early part of the Early Historic cultural contexts. Unlike Indus signs, the graffiti marks continued in existence through the Chalcolithic and Iron Age periods till the advent of Brahmi script in the 6th century BCE during Early Historic times. These were mostly found on ceramics encompassing wider geographical areas such as the Indus

river valley, Hakra-Ghagger river valley, the Western part of India, the Deccan, Eastern coastal India, the Peninsular India and Sri Lanka. The long survival of graffiti marks for more than two millennia from Harappan times down to the early part of the Christian era, in different cultural contexts has started receiving the attention of scholars. It is presumed that their presence is observed at the Pre-Harappan level and continued through all three cultural phases of the IVC. The available evidences indicate that there is a close relationship between the Indus script and the contemporary graffiti marks found on Harappan ceramics. Whether the graffiti writing system survived as a parallel system along with a well-developed and dominant Indus writing system and survived for more than two millennia is yet to be understood in a given cultural context. However, one must also accept the fact that all the graffiti marks encountered on Harappan ceramics did find their place in the Indus seal and also in graffiti-bearing potsherds of India. It is suggestive of their closeness. Nevertheless, all the signs observed in the Indus seal are hardly found on pottery. This contrast is probably due to the nature of the usage of the script, such as trade transactions, administrative directions/ expressions or normal communicative social life. Another interesting feature is that most of the graffiti marks, as the evidence goes, were unearthed in the southern cultural zone of the Indus Valley Civilization. Limited evidence, non-availability of archaeological context and inadequate documentation still elude scholars in understanding the real significance of graffiti marks.

There is an element of confusion in designating a particular writing system as the Indus and Graffiti writing systems. Both systems co-existed between 2800 and 1500 BCE, and the graffiti system, however, continued its existence even after the Indus writing system disappeared from the Indus Valley around 1500 BCE. The two terms, namely Indus script and graffiti, are extensively and frequently used in academic deliberations. There is an element of confusion in naming the signs. All the recognisable scratches engraved on the ceramics, both in Indus Valley sites and in Chalcolithic sites of Central India and Iron Age sites of South India, were designated as graffiti. The one engraved on Indus seals and other metal objects of the IVC is designated as a script. Thus, the signs engraved on the seal were called as script, whereas the identical signs engraved on ceramics were called as graffiti. Though both the signs were written by the same people, they were still respectively differentiated and documented as script and graffiti. The extensive comparative study of graffiti marks and Indus scripts made in the present study suggests that both are undeciphered signs. Both of these undeciphered signs should be called as either script or graffiti. In the South Indian context, all these signs, including the ones identical to Indus signs, were reported as graffiti marks. In the present study, all the signs, either identical to Indus or not, have been designated as graffiti marks.

The third writing system witnessed in the Indian subcontinent, Sri Lanka, and Southeast Asia is the Brāhmī writing system. In the present study, the latter two writing systems, namely Graffiti and Brāhmī writing systems, are being analyzed based on the graffiti-bearing potsherds and Tamiḻi (Tamiḻ-Brāhmī) inscribed potsherds unearthed in several excavated sites of Tamil Nadu. Keeping in view the time factor and nature of accessibility, the geographical zone is restricted to Tamil Nadu, and the comparative studies are being carried out at a limited level with available data from neighbouring regions.

It is believed that the faithful documentation of these graffiti marks and contextual analysis may help to decipher these undeciphered signs in future. The decipherment of these graffiti marks may also help us to decipher the Indus script or vice versa. Faithful documentation is the only answer to these vexing problems, as these graffiti marks serve as one of the trajectories for the benefit of future researchers. Thus, the present work presents all the available and accessible graffiti marks encountered in Tamil Nadu to scholars to serve as a sourcebook for future studies and to further the research. The issue of deciphering the graffiti marks is beyond the scope of the present study. The present study on graffiti marks is restricted to mere morphological comparison with the Indus script rather than any linguistic or racial association.

The third well-deciphered writing system is the one popularly called the Brāhmī writing system. It is called as Mauryan-Brāhmī, Asokan-Brāhmī, Prākrit-Brāhmī and Tamiḻ-Brāhmī. The first two titles are given after a dynasty and a king. The third and fourth titles stand after a language deployed in writing the Brāhmī script, namely Prākrit and Tamiḻ. On seeing the variation of usage of certain letters between the two, the Tamiḻ-Brāhmī is now called Tamiḻi (Damili) as specified in the Jain text *Pannavanasutta* of the 2nd century BCE. The Prākrit-Brāhmī is found in the entire subcontinent except in Tamil Nadu, leading scholars to probe various intricacies involved in naming the script as Tamiḻi. When compared with the entire India, the highest number of early cave inscriptions written by a common man, rather than by a State (as mostly observed in the Mauryan state), came from Tamil Nadu. Unlike other parts of India, the inscriptions are found in cave shelters, memorial stones, coins, ceramics and gold objects. Most of the early cave inscriptions of India are Buddhist in nature, whereas the inscriptions encountered in Tamil Nadu are Jain in content. All the early Prākrit-Brāhmī inscriptions of India were issued by the king Asoka or the rulers of the Mauryan dynasty, whereas the Tamiḻi (Tamiḻ-Brāhmī) cave inscriptions were occasionally issued by the kings but mostly by the traders and common man. The earliest memorial stone, so far discovered in India, datable circa 4th century BCE, carrying Tamiḻi script, came from Tamil Nadu (Rajan *et.al.,* 2007*:* 118-121). Even the Punch-Marked coins of the Mauryan period do not carry any script, whereas the square copper coins of Tamil Nadu issued by the Chera and Pandya kings

Fig. 1.3. Kilnamandi: Grave exposed with sarcophagus and graffiti-bearing pots

carry the names of the kings in Tamil̲i script. The occurrence of 97 cave inscriptions, five memorial stones and 1570 inscribed potsherds with Tamil̲i script, totalling 1672 specimens, occupies a unique place in the history of India, adequately reflecting the origin, development and transformation of this script.

On the chronological front, the recent series of AMS^{14}C dates placed the Tamil̲i script to the 7th-6th century BCE (Rajan et.al., 2021:57-86). The sample collected from the grave containing a sarcophagus (Meg. III), along with graffiti-bearing pots at Kilnamandi provided a conventional AMS ^{14}C date of 1450 BCE (3400±30 BP) (Fig. 1.3). The calibrated date falls between 1769 BCE and 1615 BCE (93.3%), and the midrange value goes back to 1692 BCE. The most significant feature of the excavation is that an AMS ^{14}C date of 1692 BCE was obtained for the first time for a sarcophagus and also for graffiti-bearing pots so far excavated in Tamil Nadu (Gnanaraj 2023: 425-432).

In archaeological stratigraphy, the graffiti-inscribed potsherds appear first and then co-exist with Tamil̲i script, and finally, they disappear by giving way to Tamil̲i script. All these significant factors led us to believe that graffiti might have developed or evolved as Tamil̲i around the 7th-6th century BCE. To understand the relationship between these two writing systems, the present work documents all the available graffiti-bearing potsherds and Tamil̲i inscribed potsherds of Tamil Nadu. The cave inscriptions are well documented and published by Sri.Iravatham Mahadevan in his monumental work *Early Tamil Epigraphy: From the Earliest Times to the Sixth Century C*E (2003 and 2014). Therefore, the present study exclusively concentrates on Graffiti and Tamil̲i inscribed potsherds with the hope that it would induce further research in this field.

Chapter-2

SITE DESCRIPTIONS

SITE DESCRIPTIONS

A short description of the selectively excavated sites yielding a considerable number of graffiti-bearing potsherds is provided here, as they offered stratigraphical and cultural sequences with substantial chronological control. The details of other excavated and explored sites are met with a few numbers and occasional discoveries with one or two specimens, are not discussed to give a panoramic view of the nature of the settlement.

1. Adichanallur

The famous urn burial site Adichanallur (77º 52' 31" E; Lat. 8º 37' 42" N) lies on the right bank of the river Porunai (Tamiraparani) in Srivaikundam taluk, Thoothukudi district, Tamil Nadu, about 4 km west of Srivaikundam. This is one of the southernmost Iron Age sites of India ever excavated. One of the largest burial grounds locally called as *thanga-parumbu* (gold mound), covering an area of 125.04 acres, is located on the southern bank of the river Porunai (Tamiraparani) (Fig. 2.1).

Adichanallur was first discovered in 1876 by an ethnologist, F. Jagor (Berlin), and then, M. Louis Lapicque of Paris explored the site. Alexander Rea of the Archaeological Survey of India excavated the site in 1889-90 (Rea 1902-03:111-143; 1903-04:18-22; 1915). His spadework brought to light several red ware urns having both secondary and primary burials along with plain and white painted black-and-red ware, gold, iron, copper and bronze objects (Fig. 2.2). He also identified more than 38 archaeological sites on both banks of the river. In 2009, M Prasanna of Pondicherry University surveyed this river valley and reported more than 50 sites (Prasanna 2009). Yathees Kumar located several archaeological sites, and a few of them are potential sites such as Ulakkudi, Sivagalai, Thirumulakulam and Parakkiramapandi (Fig. 2.3). Keeping in view of the rich artefacts, the Archaeological Survey of India re-excavated the site in two seasons in the years 2004 and 2005 (Satyamurthy 2004 - 2005). Nearly 168 urns were exposed in a 600 sq. m area (Fig. 2.4). The exposed urns could be placed under two broad cultural phases. The first early phase has the red ware burial urns containing primary burials, whereas the second late phase has both black-and-red ware and red ware urns with both primary and secondary burials. The early phase grave goods include lids, ring stands, carinated bowls and vases of plain and white painted black-and-red ware, and iron objects such as arrowheads, spearheads, axes, celts and chisels. Copper objects were also encountered.

Tamil Nadu State Archaeology Department excavated the site in the years 2020 and 2021 (Sivanantham *et.al.,* 2022). A Ground Penetrating Radar (GPR) survey was conducted. Based

Fig. 2.1. Adichanallur: Bird view of the graveyard and the river Anporunai (Tamiraparani)

Fig. 2.2. Adichanallur: Bronze artefacts recovered by Alexander Rea

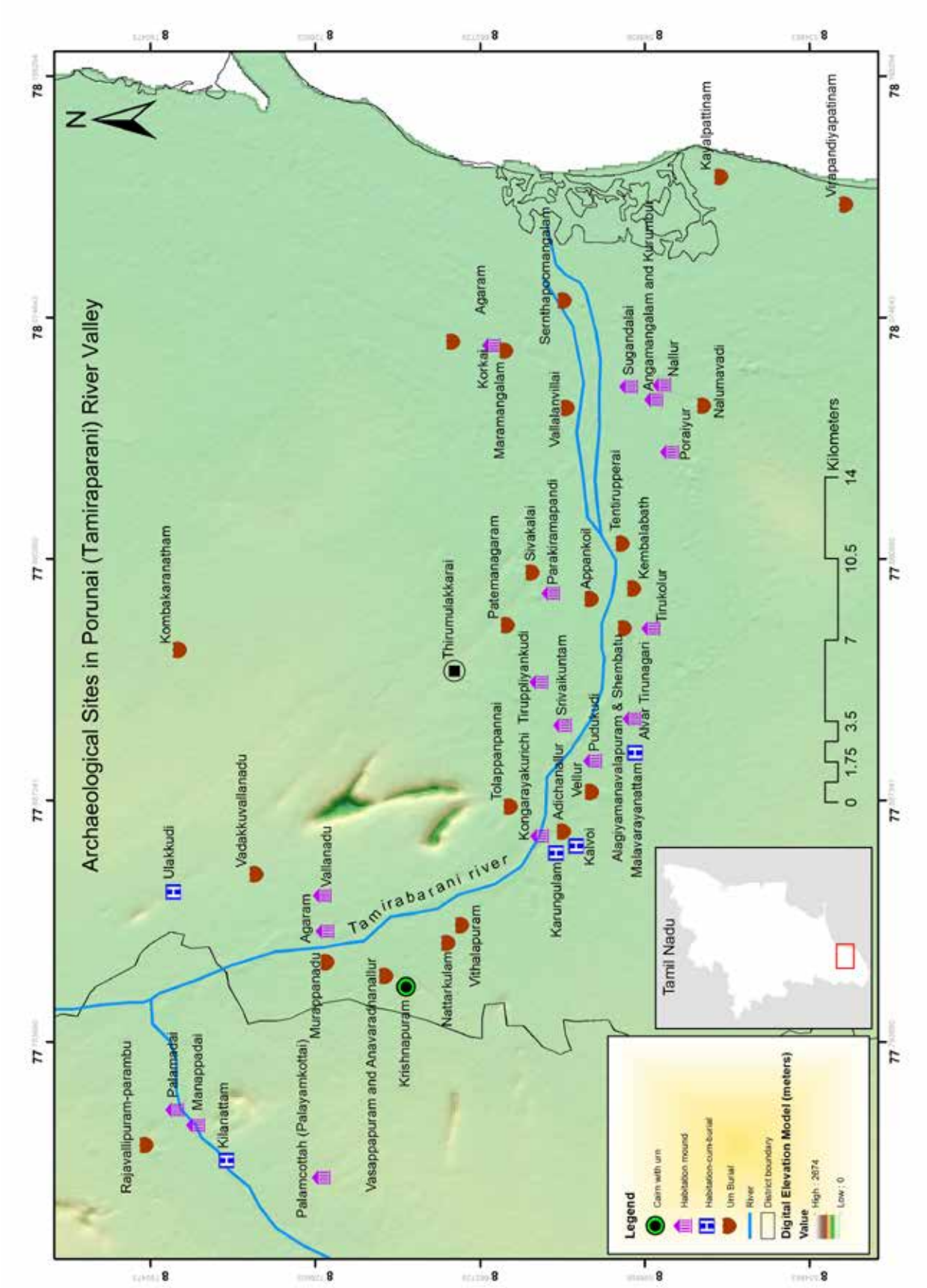


Fig. 2.3. Archaeological sites in Porunai (Tamiraparani) river valley

Fig. 2.4. Adichanallur: Excavated trenches

on the data, J.Baskar excavated in 2019-20 and 2020-2021 at northern part of the mound close to the southern bank of the river Porunai (Tamiraparani) and behind the Pandiraja temple, a medieval temple built during the Nayaka times (Fig. 2.5). The limited excavation of 56 quadrants of habitation cuttings and 44 quadrants in the grave met with the same cultural material as exposed by ASI. The excavated objects include finely made pottery in various kinds such as black-and-red ware, red ware, black polished ware, and white painted black and-red-ware (Fig. 2.6). The metal objects exposed in the graves include sword, knife, spear, arrow head, trident, etc. The ornaments in bronze include bangles, rings, decorated stands, etc. Most of the skeletal remains are found in a secondary context. The associated findings include a large number of ceramics, a variety of bronze objects, iron objects such as hoe-spades, triple-forded spears, a mother goddess, etc. Among the bronze objects, the animals, birds, a mother goddess and gold objects such as rings and diadems are unique to Adichanallur and such artefacts are rarely reported from any other urn burial sites of Tamil Nadu except at Tirumalapuram in Tenkasi taluk (Fig. 2.7). A sliver Punch Marked coin was also recovered (Fig. 2.8). The uniqueness of the bronze objects, qualitative iron artefacts and divergence of the ceramics led the Archaeological Survey of India to re-excavate the site.

Fig. 2.5. Adichanallur: Ground Penetrating Radar (GPR) Survey

Fig. 2.6. Adichanallur: Excavated trenches

Fig. 2.7. Adichanallur: Gold objects

Fig. 2.8. Adichanallur: Pandya square copper coin and silver Punch Marked coin

Graffiti and Tamil

The Archaeological Survey of India again initiated the excavations in the year 2021-23 (Arun Raj *et.al.,* 2023). The entire graveyard is divided into Locality A, B and C, and the excavations were initiated in all three localities. Seven pit burials and ten red ware urn burials were opened in Locality-A and 73 urns (22 red ware and 51 black-and-red ware) in Locality-B were opened. Grave goods such as bowls, lids, ring-stands, pots containing husk of rice, millets, etc., iron objects such as swords, spear heads, arrow heads and a dog figurine made of bronze were exposed closer to the urns, both outside and inside the urn. In Locality-C, five trenches were laid in the northern part of the mound close to the riverbank. There are 87 urns found in various sizes, and most of the urns were in red ware (Figs. 2.9). Significant artefacts, particularly high tin bronze objects, gold diadems and a variety of iron objects were unearthed (Figs. 2.10). The high tin bronze objects include rings, sieves, bowls, lids with deer knobs and bowls having three long stands with surrounding decorated birds. Iron Implements include swords, knives, spades, spears, arrow heads, spear heads, chisels, hangers, etc (Fig. 2.11). Paddy turned into husk due to long survival, and the millets are some of the important items recovered from the grave pots, bowls and basins (Fig. 2.12). The excavations conducted by the ASI and TNSDA at various points of the graveyard yielded excellent bronze objects with varied compositions of tin, such as low (around 10% tin), high (20-25% tin) and super-high (30% and above tin) tin bronze artefacts.

The Iron Age habitation mound covering about 50 acres is identified at two localities, one within a present Vellur-Adichanallur tank and another within the village of Adichanallur. The trenches laid both by the TNSDA and ASI yielded bowls, ring stands, plates, lids, pots, jars of fine varieties of black-and-red ware, black polished ware, white painted black-and-red ware and red ware. Three phases of floor levels are noticed in the top three layers. The excavation conducted by the TNSDA met with 933 graffiti-bearing sherds.

AMS Dates

In total, 21 AMS dates (ASI -14 and TNSDA-7) were received, of which 18 are non-contaminated. Out of 18 dates, 6 AMS dates (ASI-4 and TNSDA-2) came from the Early Historical level that falls between cal. 201 BCE and cal. 467 BCE and 8 dates (all ASI) from the late Iron Age phase falling between cal. 618 BCE and cal. 908 BCE. The remaining 4 dates fall in the Iron Age, ranging from cal. 1052 BCE to cal. 2522 BCE (ASI-3 and TNSDA-1) (Fig. 2.13). Importantly, the date of high tin bronze recovered from the urn burial dates back to cal. 1257 BCE (Rajan and Sivanantham 2025). Likewise, gold was also in practice during this period, reflecting the economic prosperity and cultural contacts of the community with other parts of India. The consolidated average date of the introduction of high tin bronze in Tamil Nadu goes back to 1200 BCE. Overall, the excavations at Adichanallur yielded highly

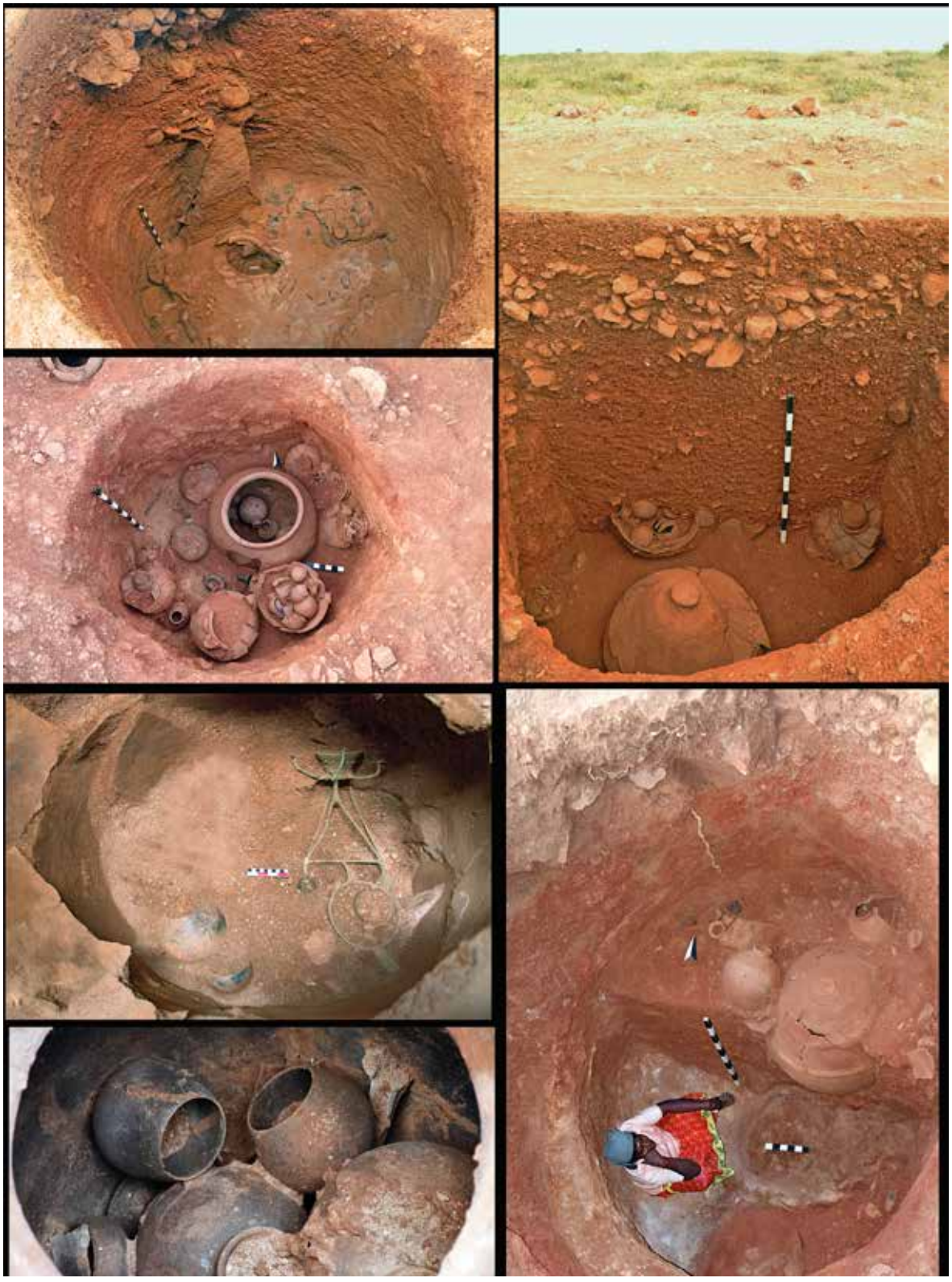


Fig. 2.9. Adichanallur: Excavated urns placed in a pit in Locality-C

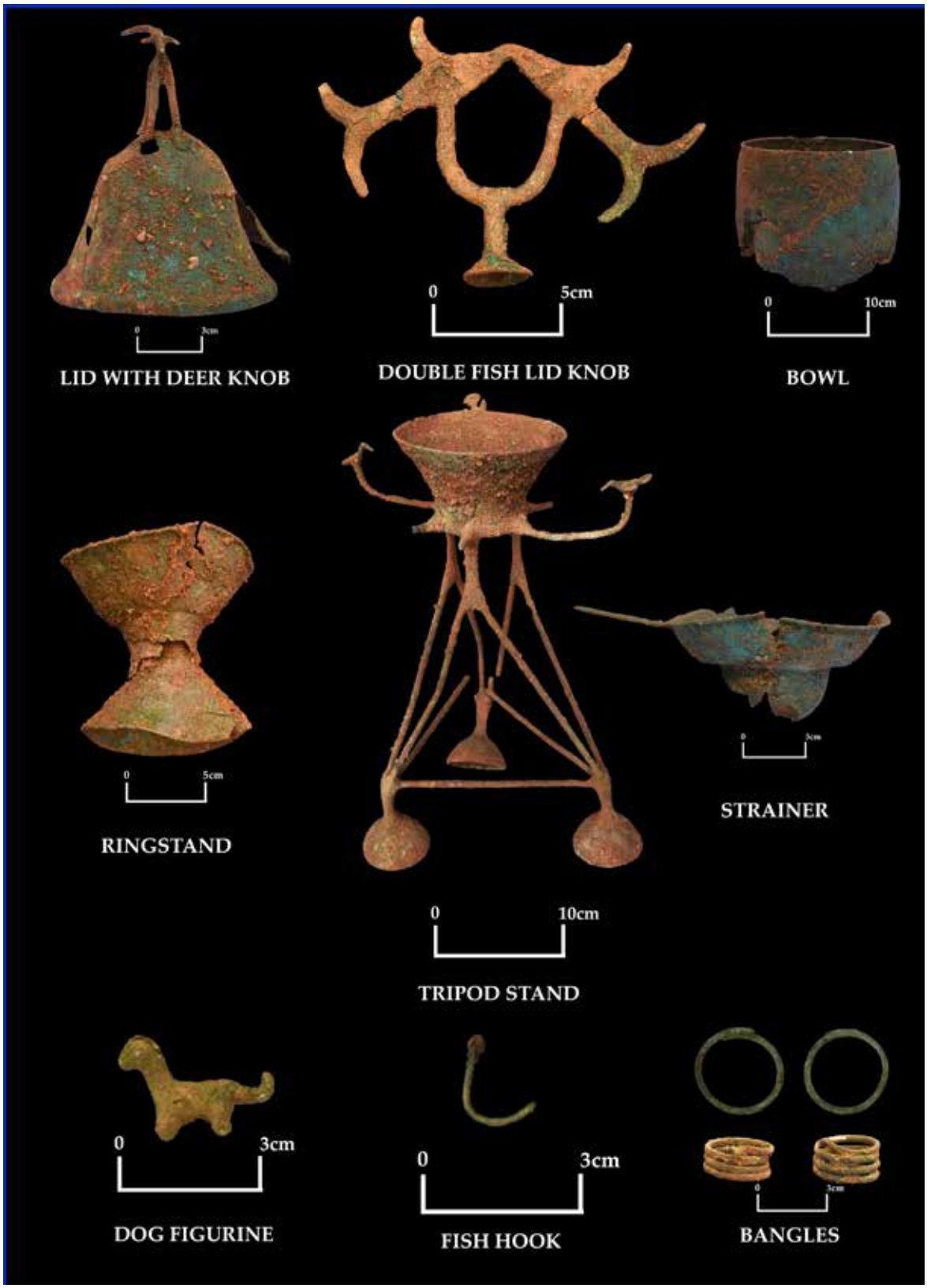


Fig. 2.10. Adichanallur: High tin bronze artefacts

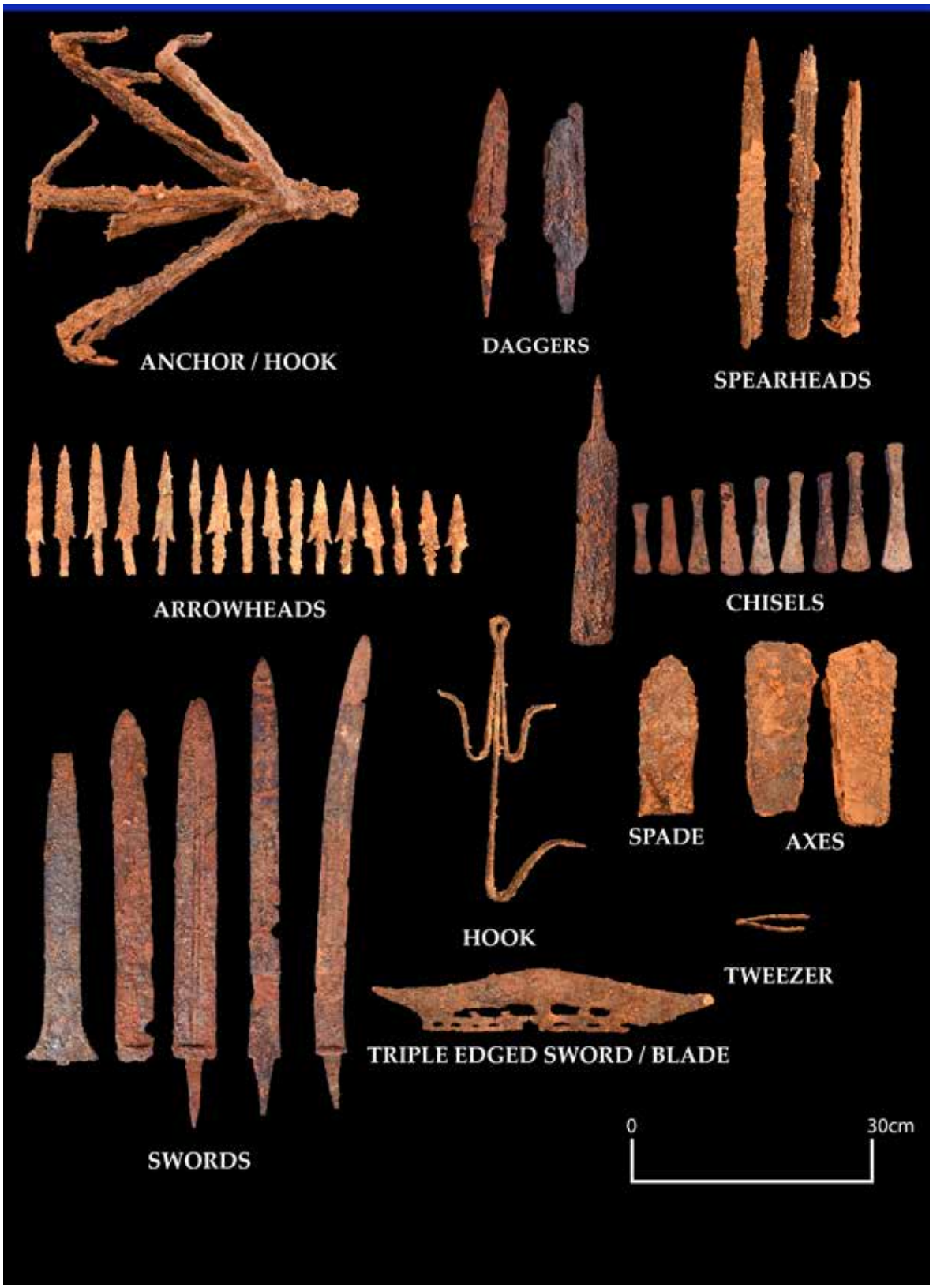


Fig. 2.11. Adichanallur: Iron objects

Fig. 2.12. Adichanallur: Paddy and Millets

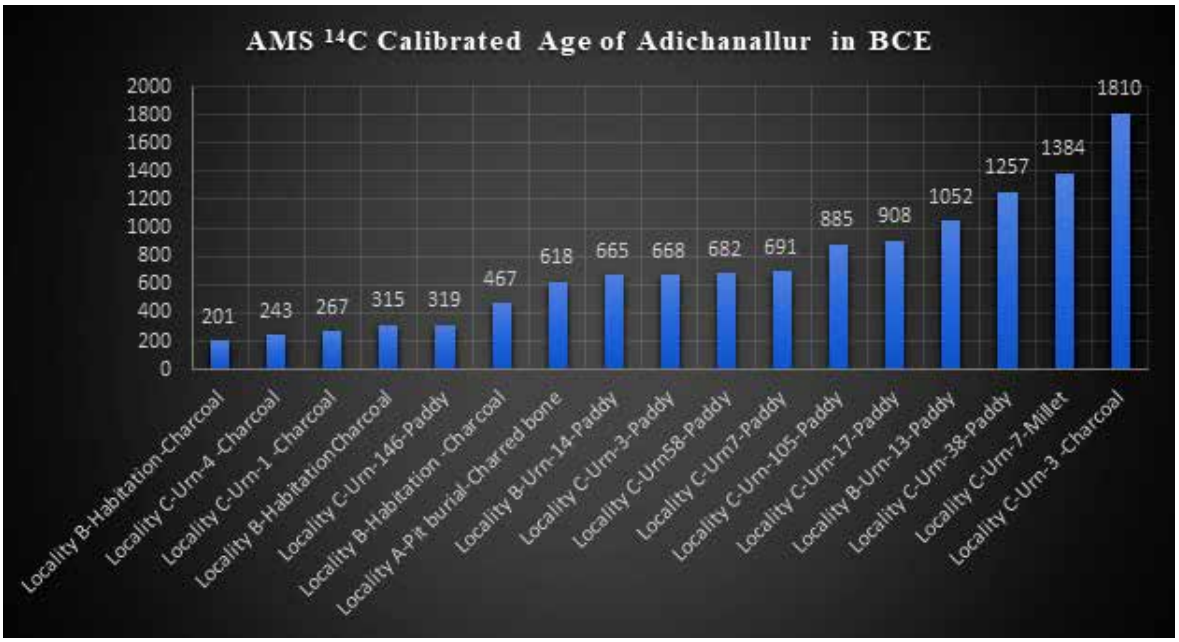


Fig. 2.13. Adichanallur: Chart representing AMS C14 dates

valued artefacts such as double-fish with stand, ring stand, tripod stand, sieve, bowl, lid with deer knob, miniature jar, bangle, etc.

The excavation was carried out in a habitation mound locally known as *Sambal-medu* (ashy mound), which met with a brick structure, floor, potteries, graffiti and antiquities. In total, 933 graffiti-marked sherds belonging to the Early Historic level were collected.

2. Alagankulam

Alagankulam (78°58' 09" E, 09°21'17"N) is located on the left bank of the river Vaigai in Ramanathapuram district, about 24 km east of Ramanathapuram. The important seaport of Early Historic period was discovered in September 1983 by the Tamil Nadu State Department of Archaeology and the excavations were carried out in eight seasons in the years 1986-87, 1990-91, 1993-94, 1995-96, 1996-97,1997-98, 2014-15 and 2016-17 (Nagasamy 1991; Kasinathan 1992, 1994, 1996; Majeed 1995; .Baskar *et.al*, 2025). The contemporary Sangam literature and Greeco-Roman records speak on the existence of major Early Historic ports such as Muciri, Korkai, Kaveripattinam and Arikamedu on the ancient Tamil̲akam coast. There are lesser important ports such as Toṇḍi, Nylcynda, and Bandar mentioned in the literature and foreign records. There is hardly any record that speaks of Alagankulam categorically. Irrespective of this, scholars attempted to identify Alagankulam with some ports such as Unoor and Marunkurpattinam of the Sangam Age (*Akanāṉūṟu* 227, 18-20). In fact, the port

Graffiti and Tamil

Marunkurpattinam emerged as a single port by clubbing the two major villages, namely Unur and Murunkur. The Marunkur was identified with a site on the seashore, whereas Unur is identified a little interior to the west of Marunkur. It seems the Unur had a fortification (*Narriṇai* - 258). The Unur, also known as Nellin-Unur (meaning paddy village), is also portrayed as one of the production centres of paddy. Nellin Unur is identified with Nellinur of *Maturaikkāñci,* where the place is portrayed as a very busy port to which a number of ships used to bring articles from different countries. The waiting ships at this port have been compared with the group of mountains that are about to seize the flood (*Maturaikkāñci* 75-88). According to the local legend and Tamil ballad *Nālumandirakummi*, the village was ruled by Alakentiran, which is supported by the usage of Alakendramangalam. Later, it was changed into Alagankulam.

Excavations

In total, 19 trenches were laid till 1998 in 8 hectares of habitation mound locally known as *Kottaimedu* and *Pudukudiyiruppu,* lying 200 m north of the river Vaigai. The rich cultural material unearthed in the excavations compelled them to have a second phase of excavations. Five trenches in 2014-15 and 52 trenches in 2016-17, totalling 57 trenches, were laid (Fig. 2.14). Altogether 76 trenches were opened in all the phases of the excavations.

On the basis of cultural items, material evidence, and stratigraphical analysis supported with AMS dates, the habitation mound was divided into the following four cultural periods:

Period I Early Historic - Phase A : 5th century BCE - 3rd century BCE

Period II Early Historic - Phase B : 3rd century BCE - 1st century CE

Period III Early Historic – Phase C: 1st century CE - 5th century CE

Period IV Historical : 5th century CE - 12th century CE

The trenches laid at *Kottaimedu* revealed the first three cultural phases, and the trench laid at *Pudukudiyiruppu* revealed the last cultural period. The first phase of the cultural sequence (5th- 3rd century BCE) representing early historical culture is characterized by the ceramic tradition including black-and-red ware, grey ware and red ware in the lower level, mat-designed pottery in the middle level and NBP in the top level along with Tamili (Tamil-Brahmi) inscribed potsherds and a large number of graffiti bearing potsherds observed in all types of pottery (Fig. 2.15). The large quantity of conches found in many of the trenches

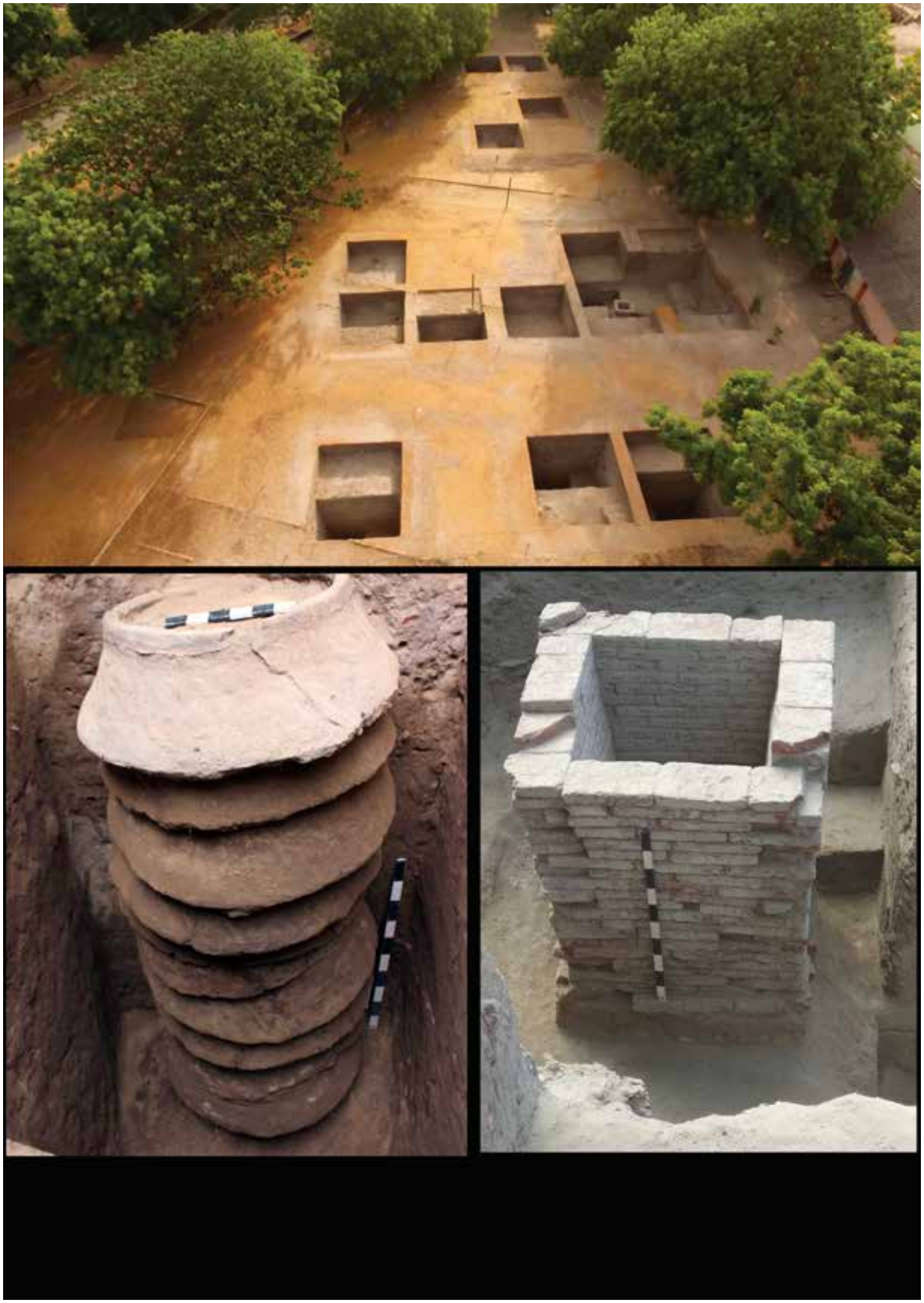


Fig. 2.14. Alagankulam: Excavated trenches

Fig. 2.15. Alagankulam: Artefacts and antiquities

Fig. 2.16. Alagankulam: Rouletted ware

suggests they are one of the primary occupations. The second phase (3rd century BCE -1st century BCE) is distinguished by the occurrence of potsherds of foreign origin such as stamped ware, terra-sigillata potteries, amphorae jar pieces and the turquoise glazed potteries (TGP), South Arabian ovoid jars, Torpedo jars and various types of rouletted dishes and bowls marked the new arrival at this site (Fig. 2.16). This phase also met with black-and-red ware, mat-designed pottery, grey ware, rouletted ware, NBP, Tamil-Brahmi inscribed potsherds, punch-marked coins and Pandya copper coins. The notable antiquities of the phase are: shell bangle pieces, semi-precious stone beads, glass beads, copper seals, ivory objects, gamesman, spindle whorl, pot sherds with ship symbols and crucibles. These evidences make this phase one of the unique phases of this site. The third phase (1st century BCE- 5th century CE) yielded Roman coins in addition to the above-mentioned cultural traits. The usage of grooved roofing tiles, especially 'L' shaped roofing tiles, semi-precious stone beads, and shell bangles, is one of the notable features of this phase. In addition, terracotta dice, symbols of ship motifs, and elephant and bull figures in rouletted ware were also exposed. The final phase (5th century CE-12th century CE) represents medieval culture. It is characterized by the occurrence of coarse red ware, Chinese celadon and porcelain ware. Among the brick structures, the beautiful silo-like square brick structure requires special attention.

The thick cultural deposit belonging to the Early Historic period alone lasts more than 4m. Based on the inscribed potsherds and graffiti marks, the excavator pushed the antiquity of the site prior to the 6th century BCE. The huge habitation mound and its associated burial complex covering a larger area suggest that the site formation must have taken place over a longer period. The size of the settlement, formation of trade routes, emergence of port cities and trade centres, usage of Tamil-Brahmi script both on the coin and rock shelter, the establishment of Jain centres near the ancient settlements and the thickness of the Early Historic deposit clearly indicate that the Early Historic period would have emerged in this valley well before the 5th century BCE.

Cultural Items

The rich cultural items, such as semi-precious stone beads of carnelian, amethyst, quartz, soapstone and agate, were reported in large numbers. The availability of the chipped and semi-finished carnelian and quartz beads suggests they were manufactured at Alagankulam. The presence of agate, carnelian and lapis lazuli are indicative of trans-regional and trans-oceanic trade contacts. The stone objects such as legged querns, mullers, pestle-cum-ponders, rubber stones, grinding stones, whetstones, polishers, stone weights and balls, terracotta objects such as hopscotches, beads, pendants, gamesmen, spindle whorl, ear lobes, dice and animal and human figurines, indicate their daily cultural life. The Gulf of Mannar is known for

Fig. 2.17. Alagankulam: Shell industry

Fig. 2.18. Alagankulam: Shell objects

pearl fishing and conch diving. Therefore, a large quantity of shell objects and sawn conches were exposed along with the shell industry (Figs. 2.17-2.18, and it survived as one of the thriving industries. The ivory seals deserve a special mention. The human intaglio observed on rouletted ware and mould-pressed decorated potsherds with human figures are one of the finest specimens that could give anthropomorphic features of the contemporary population.

Coins

Alagankulam yielded 8 silver Punch-marked coins belonging to the 5th century BCE to the 3rd century BCE. The two square Pandya copper coins contain the figures of a bull and an elephant. The real commercial importance of Alagankulam with transoceanic trade with the West, especially with Rome, is attested by a range of Roman coins from Alagankulam. It consists of a copper coin of Roman emperor Valentine II, Theodosius, Arcadius and a round-shaped copper coin of Concordia and Salus Rei Publicae. One could see a pattern in the availability of coins. All the coins that were encountered at Alagankulam are of late Roman coins. However, the available evidences clearly suggest that the ports of the east coast had an extensive network of trade contacts with Sri Lanka and South East Asia even before the arrival of the Romans (Kasinathan 1993:47-50).

Inscribed potsherds

All the early historic sites have yielded several fragmentary potteries with graffiti marks and Tamil̲i inscribed potsherds in Tamil Nadu. The occurrence of post-firing graffiti marks engraved on the exterior portion of the potsherds at the pre-Brahmi level suggests that these graffiti marks were vague even before the introduction of the Brahmi script. Further, the coexistence of Brahmi and Graffiti indicates that even after the introduction of the Brahmi script, these graffiti marks were in practice for a considerable period till the Brahmi script gained full control over literacy. The earlier forms of pictographic writing that survived through the graffiti marks on earthen vessels are the true evidence of the common man's artistic creativity. The majority of the post-firing graffiti marks obtained from Alagankulam occur on the shoulder portion of the earthenware. The occurrence of animal and human figures and rouletted sherds with ten signs, is a remarkable finding from Alagankulam. Nearly 376 sherds with graffiti marks on black-and-red ware, black ware, red ware, grey ware and rouletted ware were reported. The complete graffiti marks, such as swastika, trident, ladder, square, circle, boat, pyramid, sun, fish, hill, river, arrow, and triangle, were collected from the site. One of the finest specimens is the boat sign engraved on the shoulder portion of the dish. Besides, 93 inscribed Tamil̲i inscribed potsherds were recovered from the excavations. Unlike other sites, the Tamil̲i inscribed potsherds recovered from Alagankulam have close affinity with Sri Lanka, thereby showing

the close relationship between India, particularly with Tamil Nadu and Sri Lanka.

3. Arikamedu

Arikamedu (11°55'N; 79°50'E) was an ancient industrial port city located on the Coromandel coast of Tamil Nadu near Pondicherry. It is identified with *Vīrai* of Chola chief Vīrai Vēṉmāṉ Veḷiyaṉ Tittaṉ of Sangam Age (Mahadevan 1970:204-206; *Naṟṟiṇai* 58:5; *Akanāṉūṟu* 152:5-6; 206:13-15; Begley *et.al.,* 1996:2-3; Tomber 2008:133). It is known to the Roman world as Poduke; the city of Arikamedu, lay along the southern bank of the river Ariyankuppam near the mouth where it empties to the Bay of Bengal. The name Arikamedu evolved from the Tamil word *Arikanmedu/Arukanmedu*, the mound of *Arukan* (Jain *Tirthankara*). Incidentally, there was a Buddha sculpture worshipped as Sri Brahma Rishi at the site Kakkaiyan-thoppu (probably a corrupt form of *Cākkaiyaṉ/Cākkiyaṉ,* a name of Buddha) close to the site, which is considered later as a Jain (*arukan*) sculpture. Later on, the location of Pondicherry was identified with the port of *Podouke* of the *Periplus of the Erythraean Sea* and Ptolemy. In 1937, Jouveau-Dubreuil collected beads and gems, one of them with the head of Augustus in *intaglio,* leading to the assumption that Arikamedu was a veritable Roman town (Jouveau-Dubreuil 1941). The port city has extensive glass bead manufacturing facilities and is considered the "mother of all bead centres" in the world. Apart from it, the city was also a manufacturing hub of textiles, particularly of Muslin clothes, fine terracotta objects, jewellery from beads of precious and semi-precious stones, glass and gold. Most of their productions were aimed at export. During its peak period, 100 BCE to 100 CE, the city had extensive transoceanic trade relations with Imperial Rome.

Among the artefacts, the unfinished intaglio carrying a cupid and bird, along with other Roman artefacts like amphorae found at Arikamedu, received the attention of Wheeler, which led him to have a full-fledged excavation (Wheeler *et.al* 1946). He relied on imported ware such as Arretine ware, rouletted ware (presuming it as a Roman ware) and amphorae (Figs. 2.21-2.22). The excavations conducted by Wheeler met with a large number of beads, brick structural remains (Figs. 2.19-2.20), a well and a ring-well, ceramics such as Arretine ware, rouletted ware and amphorae of Roman origin (Figs. 2.21-2.22). Rouletted ware was erroneously identified as Roman ware, but now it is considered Indian ware. The port city was connected with several other port cities of the contemporary world, particularly with ports of Sri Lanka and Southeast Asia. The raw materials were brought to Arikamedu for manufacturing and export to other places. The structural remains found at Arikamedu along the riverbank are considered to have received and provided berths to ships. Thus, the archaeological excavations since the early 20th century brought out fascinating evidence of an urban settlement at Arikamedu. The city had two distinct yet related parts, the south

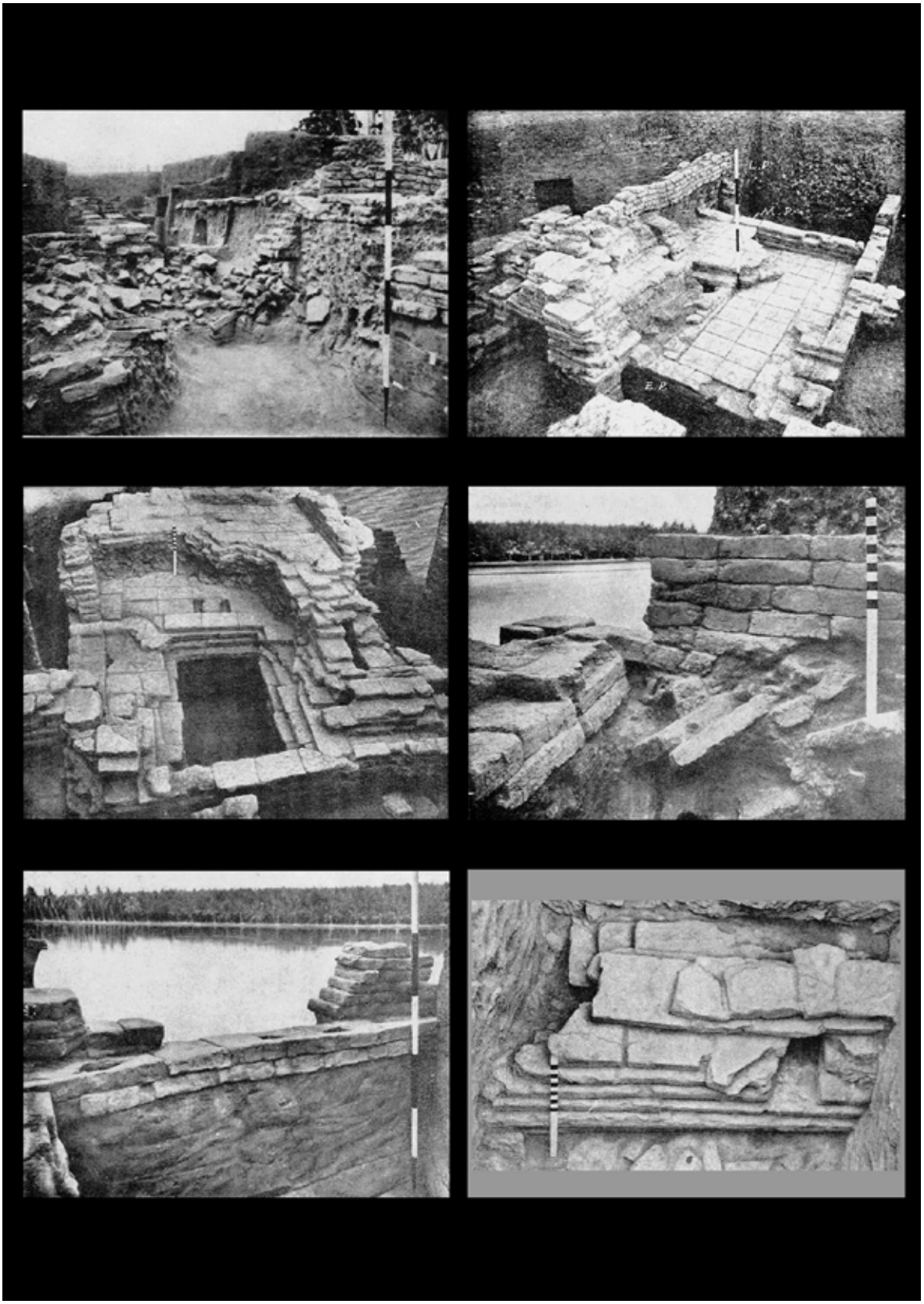


Fig. 2.19. Arikamedu: Brick structures

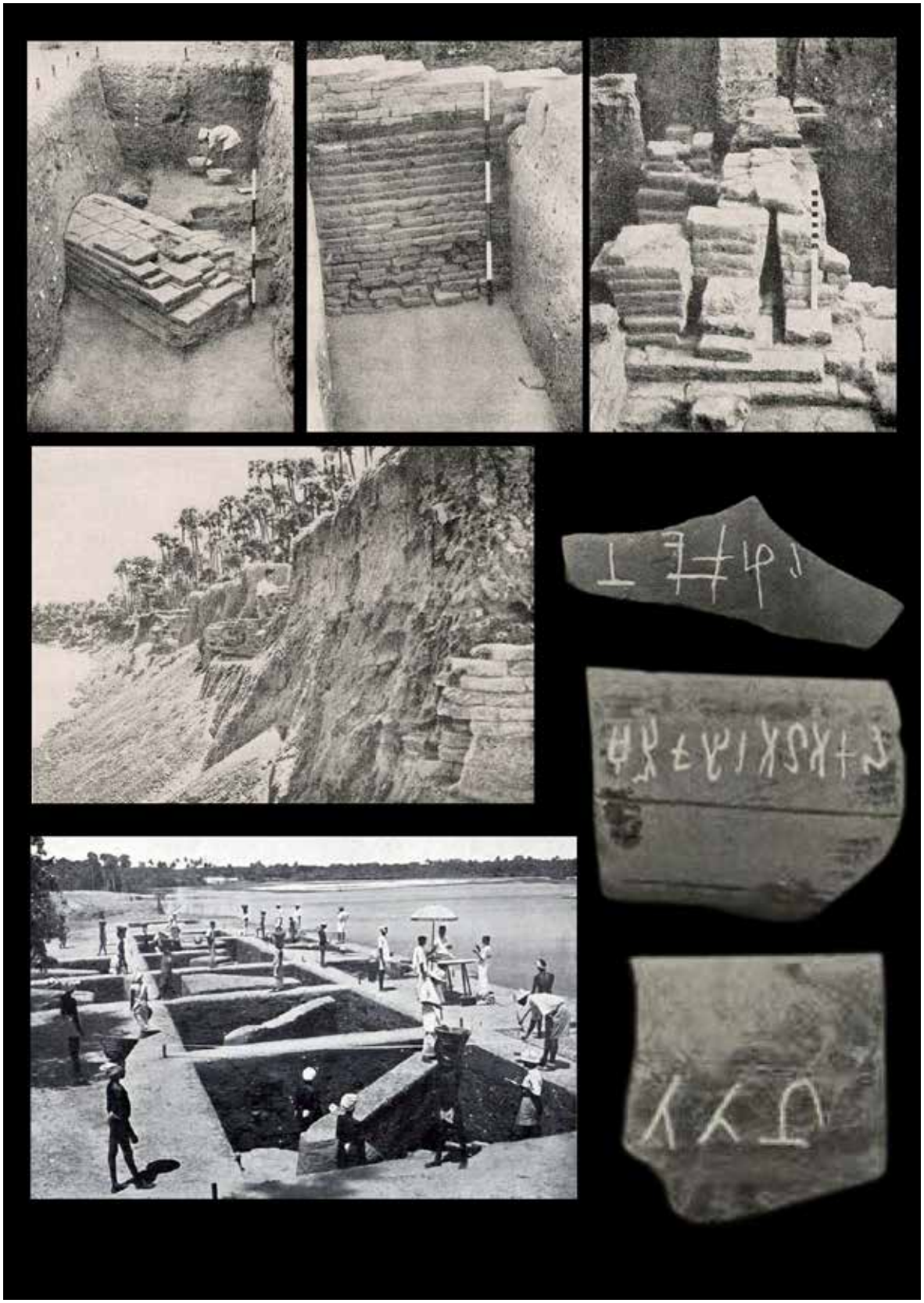


Fig. 2.20. Arikamedu: Brick Structures and Tamiḻi inscribed sherds

Fig. 2.21. Arikamedu: Rouletted ware

Fig. 2.22. Arikamedu: Various pots

and the North. The Northern part of the city, near the sea, was a harbour and the southern part of the city was meant for industrial activities. Till the excavations at Arikamedu, South Indian archaeology was not placed under any appreciable chronological frame. Wheeler, based on Roman artefacts, fixed the chronological frame for the archaeological sites of South India. Further, he introduced the stratigraphical sequence at Arikamedu, which eventually produced a kind of relative stratigraphical chronology. Based on Arikamedu dates, the date between 300 BCE and 300 CE is widely applied to many of the Early Historic sites of South India till the advent of AMS dates. But recently, based on a large number of AMS dates, the date has been pushed back to the 6th century BCE to the Early Historic period of South India.

Archaeological excavations

The site of Arikamedu was first mentioned in the travel writings of a French astronomer, Guillaume Le Gentil, who visited Pondicherry in 1768-71. He recorded the presence of archaeological evidence such as brick walls, large tanks and earthenware vessels. After him, French archaeologist G. Jouveau-Dubreuil visited the ancient site in 1941 and identified it with the ancient city of Poduke Emporium, mentioned in the *Periplus of the Erythraean Sea*. A. Aiyappan of the Madras Government Museum excavated the site in 1941 at the invitation of Jouveau-Dubreuil (Aiyappan 1941). This information might have prompted a series of excavations by Fr. L.Faucheux-R.Surleau between 1941 and 1944 (Faucheux 1946). Though the sporadic digs yielded valuable artefacts, it was left to Sir Mortimer Wheeler to excavate the site scientifically in 1945.

Following Wheeler, a French team under the direction of Casal excavated the site between 1947 and 1950, and they made some important observations of the site. He felt that it was a multi-period site starting from the Iron Age. Further, he identified various workshops working on metal, glass, gemstones, ivory and shells in the southern sector (Casal and Casal 1956). The part of the brick structure identified in the northern sector is identified as a quay. The wealth of information provided some clarity on the nature of transoceanic trade. At the same time, it paved the way for several debates. He observed the presence of black-and-red ware potteries from the cultural deposit before the arrival of Mediterranean traders in Arikamedu. This shows the possibility of having strong relations between Arikamedu and the nearby Megalithic burial site Suttukeni, where one came across large quantities of black-and-red ware pottery as well as gold and diamond jewellery. This site might have survived as a manufacturing centre and port activities right up to the medieval period. So the city was alive well after the Romans left and had survived during the Chola, Pallava and Vijayanagara rulers. Scores of medieval potteries, coins and other artefacts were excavated during Casal's excavations.

Graffiti and Tamil

To get much lucidity on these debates, Vimala Begley drew a well-planned excavation at Arikamedu in the years between 1989 and 1992 (Begley, *et.al.,* 1996). The reassessment of Arretine and amphorae ware recovered from previous and present excavations led to some clarity on the nature of its source and the date. Previously, it was assumed that the source for amphorae is Italy but the re-analysis of amphorae by Will indicates that the sources are from Kos, Knidos, Rhodes and Turkey of Eastern Mediterranean and Italy, Gaul, Spain and North Africa of Western Mediterranean and are mostly datable between middle of first century BCE and middle of first century CE except the Greek Koan amphorae which has been dated to second century BCE (Will 1992:151-156; 1996:317-349; 2004:325-403).

Roberta Tomber further expanded its source to Egypt and Hadramawt (Saudi Arabia, Yemen and Oman) (Tomber 2008:137). Other findings include lamps, gold-foil beads, semi-precious stone beads (Fig. 2.23), intaglios (mostly produced by local artisans imitating Greek/Hellenistic tradition), glass vessels, seals and sealings. Irrespective of these findings, we hardly come across any Roman coins in a stratigraphical context.

The underwater archaeological exploration was carried out by the Marine Archaeology Unit of the National Institute of Oceanography, Goa in March 2008 at the mouth of the Ariyankuppam River to locate the inward extension of the port (Fig. 2.24)

At Arikamedu, nearly 66 Brahmi inscribed potsherds were recovered, mostly in Tamil-Brahmi character and a few in Prakrit-Brahmi, with more influence of Sri Lankan Prakrit indicating Sri Lankan contact. In all the above-said reassessments, the focus is more on the West, particularly Indo-Roman trade, and hardly any could see a discussion on the Sri Lankan and Southeast Asian trade. The study of glass beads in Southeast Asia, particularly in Thailand, suggests that several materials, including Roman artefacts, have been exported to Southeast Asia and Sri Lanka from Arikamedu.

Chronology

The site Arikamedu is one of the important archaeological sites in India where the excavators found a cultural continuity from 300 BCE to 1800 CE. The urban settlement was witnessed from the Iron Age to the medieval period. The continuity has been established by studying various artefacts such as terracotta objects, beads, fossils and other metallic objects found in and around Arikamedu. Vimala Bagley reconstructed the port city of Arikamedu's cultural sequence into 10 cultural phases with collected materials, mainly ceramics.

Cultural Period	Time	Cultural Remains
Phase-I	300 BCE-200 BCE	Tamiḻi Inscribed potsherds, graffiti sherds, black-and-red ware
Phase-II	200 BCE-100 BCE	Appearance of rouletted ware, black-and-red ware, ring-well
Phase-III	100 BCE – 50 BCE	Amphorae, Sigillata, brick walls, roof tiles
Phase-IV	50 BCE-50 CE	Terra sigillata pieces of dishes and cups, Arretine, brick structure (warehouse)
Phase-V	50 CE – 200 CE	Post-Sigillata, amphorae, with less occurrence of rouletted ware
Phase-VI	200 CE – 600 CE	Small African amphorae
Phase-VII	600-CE-1100 CE	Coarse red ware
Phase-VIII	1100 CE – 1500 CE	Chinese coins, Islamic ware
Phase-IX	1500 CE -1700 CE	No significant artefacts
Phase-X	1700 CE – 1800 CE	Seminary residence, Mission house

The major antiquity encountered at Arikamedu is Indo-Pacific monochrome translucent and semi-translucent beads found in opaque, reddish-brown, orange, yellow and green (Fig. 2.25). Collar beads and stone beads were also found. While terracotta figurines are rare, beads of the usual types and materials, including three gold ones, are profuse in number. Metal objects include iron nails and a copper rattle. An ivory handle, a wooden toy boat, a roughly fashioned block of wood with its central portion scooped out, the leg of a cot, and a mallet and pieces of rope are the other worth-mentioning finds. Besides, the usual pots, both from sarcophagus and urn burials, were recovered (Fig. 2.26).

Inscribed potsherds

Graffiti Marks

A total of 104 sherds with graffiti marks were collected in the excavation (Begley 1989-92). Of which only 91 are clearly visible and understandable. The rest of the graffiti is illegible. The graffiti marks were divided into pictorial and non-pictorial forms engraved on black-and-red ware and red slipped ware. A standing male figure with a spade-like tool held in his raised left arm, while the right arm hangs down, he is wearing a loose, flowing lower garment from below the naval to the ankle, is depicted on one sherd. Other types of symbols are fish, loops, oblique lines, arrows, ladders, parallel lines, hills, Ujjain symbol, boat, enclosure, intersecting line, trident, lattice design, plus mark, leaf motif and mahout axe.

Tamiḻi

Laying the foundation for the documentation of Tamiḻi inscribed sherds was first made

Fig. 2.23. Arikamedu: Semi-precious stone beads

Fig. 2.24. Arikamedu: Underwater archaeological exploration

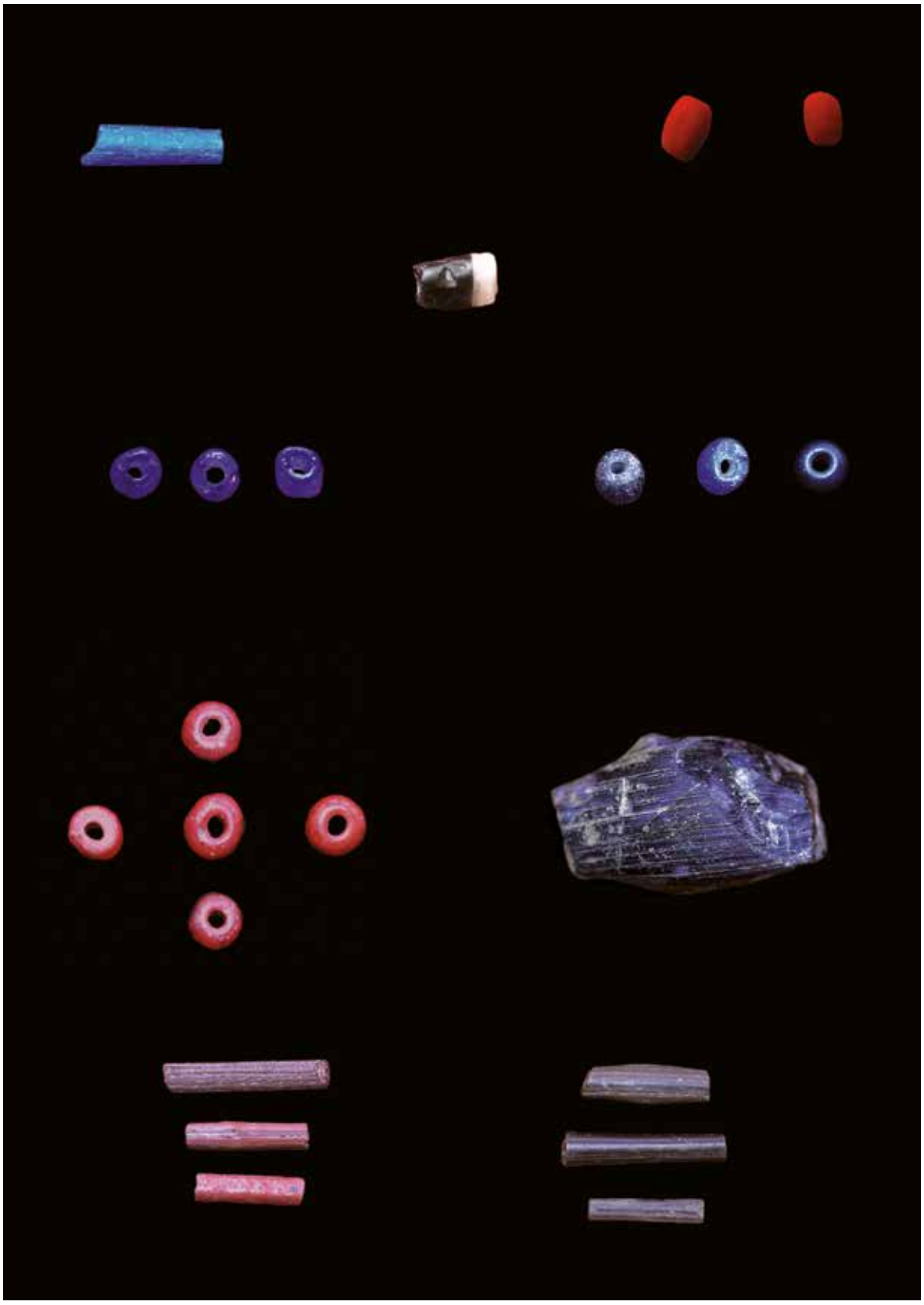


Fig. 2.25. Arikamedu: Glass beads

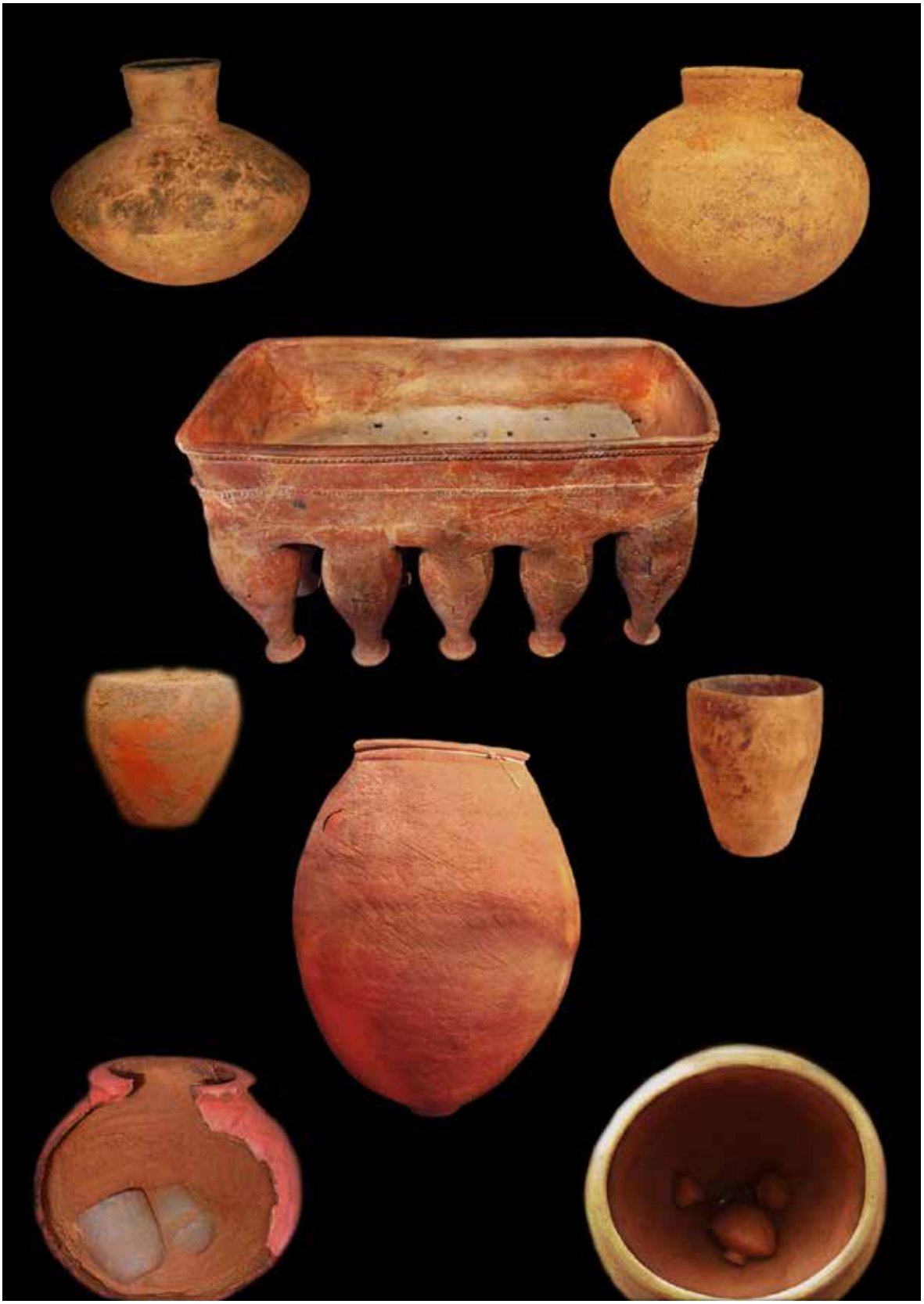


Fig. 2.26. Arikamedu: Sarcophagus, urn and other grave goods

at Arikamedu. In total, 66 Tamil-Brahmi inscribed sherds were documented providing the names such as *muti kuyiraṉ aka, nakaika[ḻa]ca, nātēvvai tattai kōtitirasa, tatirāma, yakhamitrasa, ātaṉ....caṇacaṇ[tai]kobati[.], cāttaṉ āviiṉ kōtiracaṉ ātiraiyaṉ paṉaka, gaṟatikaśakka, Buʇthasa, ṇakkaṉ, tāṉī tuteya, ..muṉaya., ..ātaṉ makaṉ, akal, kaṇaṉ, kuyiraṉ, melacātaṉ, kubiraha* and *uttiraṉ*. Some of the names have an affinity of Sri Lankan Prakrit.

4. Keeladi

Keeladi (Lat. 09°51'40" N; Long. 78°11'70") is located on the right bank of the river Vaigai about 12 km southeast of Madurai in Tirupuvanam taluk of Sivagangai district and 3 km south of Silaiman on Silaiman-Kondagai road. The river Vaigai flows on the northern side of Keeladi, at a distance of 2 km. It is a cluster site comprising the Manalur, Agaram and Kondagai. The village of Manalur is located to the east of Keeladi. Similarly, the village of Agaram is situated on the southeastern side of the Keeladi archaeological mound. The western side of Keeladi is bordered by the village of Kondagai. The local school teacher, V. Balasubramaniam, first located the Keeladi habitation mound locally called *Mettu-punjai* and *Pallichandai-Thidal* in the year 1976. It is ideally located on the major trade route connecting the Sangam Age Pandya's international call of port Alagankulam at the mouth of the river Vaigai on the shores of Bay Bengal and the Sangam Age Chera port Muciripattinam (present Pattanam) located at the mouth of the river Periyar on the shores of the Arabian Sea on the west coast, which passes through important archaeological sites such as Keeladi, Madurai, Thathapatti, Pulimankomabi, Chinnamanur, Uttamapalayam, Uttamapuram, Gudalur, Vanji and Pattanam (Fig. 2.27). The major products that are exchanged along this route are conch, shells and pearls of the Gulf of Mannar, semiprecious stones, spices, pepper, medicinal plants, aromatics and other hill products of Kambam valley. Hence, they might have used this trade route to enter the Pandya region from the west coast of the Chera country (Santhalingam 2011). The occurrence of Punch Marked coins at Boḍinayakkanur and Roman coins at Alagankulam, Madurai, Uttamapuram and Kuḍalur, the ceramics such as NBP, Amphorae, rouletted ware and Arretine ware clearly point to the existence of trade along this route. The occurrence of the names of traders in the Tamiḻ-Brāhmī cave inscriptions marketing oil, gold, paddy and ploughshare indicates the vibrant trade, and they also had enough wealth to offer as gifts to Jain monks. The huge settlements noticed along the trade route at Uttamapuram, Uttukkadu, Puduppatti, and Tamanapatti reveal the existence of a continuous occupation. These sites yielded a large number of black-and-red ware, russet-coated ware, burnt bricks of abnormal size and rouletted ware. A Jain monument dated back to *circa* the 9th century CE was also found at Uttamapalayam. It is a well-known fact that most of the Jain monuments were established on trade routes and patronized by merchants. The

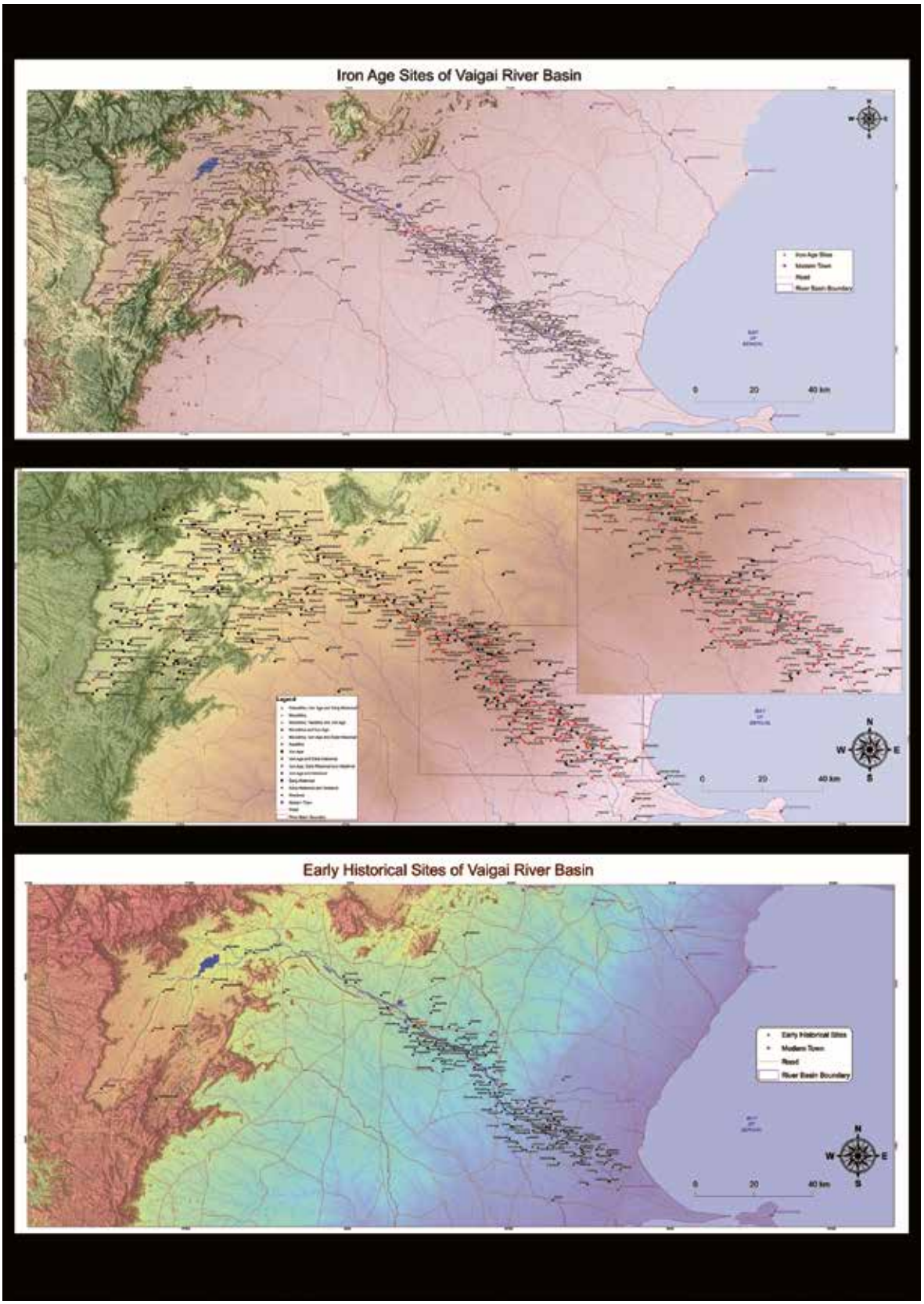


Fig. 2.27. Keeladi: Archaeological settings of Keeladi

inscription found on the walls of the Siva temple at Chinnamanur speaks of the existence of a mercantile guild, *Ticaiāyirattu ayiṉūṟṟuvar*. All these evidences reveal the continuous existence of an ancient trade route, which connects the east coast and west coast through the Kambam pass. The Sangam works of *Maduraikanchi* and *Paripadal* vividly describe the greatness of the river Vaigai and the significance of this region.

The archaeological and epigraphical explorations and excavations conducted in the Vaigai river valley brought to light more than 340 archaeological sites, demonstrating the rich archaeological potential of the valley from Middle Palaeolithic times to the Historical period. The Tamiḻ-Brāhmī cave inscriptions found in rock shelters and memorial stones received a special attention (Robert Sewell 1882, Francis 1906, Foote 1916; Krishna Sastri 1919, Subramanya Aiyer 1924, Mahadevan 1968; Subbarayalu 2008:209-248; *IAR* 1956-57:80-81; Gururaja Rao 1972:86; Vedachalam 1985; Selvakumar 1996:27-42; Sridhar 2004:29-35; Rajan *et.al* 2009:46; Rajan 2007:118-119; Rajan 2007:164-167; Sridhar 2004:29-35; Rajan and Balamurugan 2019:60-62). Nearly 153 Tamiḻi inscriptions engraved in rock shelters (58 cave inscriptions, 4 memorial stones, 84 inscribed potsherds and 7 gold objects) from 23 sites were documented. Besides, the large number of Tamiḻi cave inscriptions encountered in and around Madurai dedicated to Jain monks and the earliest memorial stones found at Pulimankombai and Thathappatti and other historical monuments located on the banks of the Vaigai River stand as a testimony to its historical and cultural significance. Thus, the site Keeladi and its cluster sites Agaram, Manalur and Kondagai received much attention, and it met with considerable archaeological interest. Epigraphical and numismatic data. K.Amarnath Ramakrishna of the Archaeological Survey of India conducted the Keeladi excavations in the years 2014 – 15 and 2015 – 2016 followed by P.S.Sriram in the year 2016 – 17. Since the year 2018, the excavation work has been taken over by the Tamil Nadu State Archaeology Department, and the excavation is still in progress (Amarnath Ramakrishna 2017:170-183; Sivanantham *et.al.,* 2019) (Fig. 2.28).

The three seasons of excavations conducted by ASI exposed several prominent archaeological features, including large brick structural activity (Fig. 2.29), terracotta ring-wells, terracotta pipes, hearth, graffiti and Tamiḻi inscribed potsherds and over 5200 antiquities such as glass beads, terracotta objects, metal objects and glass beads (Ramakrishna *et. al.* 2018). The exposure of huge brick structures with elaborate structural details discovered in the vicinity of the terracotta pipes, two tank-like structures, intricately connected by overlapping brick channels, and a double-walled furnace with deposits of ash added to the significance of the site.

Fig. 2.28. Keeladi: Excavated trenches

Fig. 2.29. Keeladi: Brick Structures

Cultural Significance

Keeladi has become a significant archaeological site of the 21st century in Tamil Nadu, representing a buried urban settlement on the bank of the Vaigai River. It encompasses an extensive cultural mound, namely *Pallichandai-tidal, Mettu-tidal* and *Vadakku-tidal* that spans a vast area of 110 acres (44.51 ha.) with a 4.5 km circumference and raised to about 3 m above the present surface. The intensive archaeological excavations focused on revealing numerous aspects of the ancient settlement, including the contemporary environment, structural engineering, dietary patterns of the ancestors, techniques of water management, the industries that existed, the lifestyle of the people, as well as their domestic and foreign trade practices and much more. Thus, the excavation is carried out to understand the change in subsistence patterns through pollen and phytolith studies, the genetic mapping through aDNA studies, internal political dynamics, the emergence of a writing system, the transformation from graffiti to Tamil̲i (Tamil-Brahmi) and various other cultural activities.

Technological advancement in metallurgy, textile, bead making, iron tools and implements, surplus production in agriculture, rise and growth of internal and external trade, establishment of highways with able transports, high specialization in arts and crafts, substantial growth of demography, emergence and growth of rural, semi-urban, urban centres, capital cities, port towns, social diversification and political hierarchy or structure etc., are considered to be the key factors of the urbanised society. Keeladi reported with such evidence in support of urbanization.

A large quantity of antiquities were unearthed, of which glass and terracotta beads dominate the scene, probably accounting for about 75%. Other objects of cultural importance are beads made of agate, quartz, plain and etched carnelian, beryl, garnet, sapphire, lapis lazuli, shell, ivory and pearl. Terracotta artefacts consist of human and animal figurines, seals, dice, toy cart wheels, spindle whorls, gamesmen, ear studs, hopscotches, lamps, pendants and balls. Ivory combs and dice, shell objects, silver punch-marked coins and unidentified copper coins, copper objects such as bangles, wristlets and rods and gold ornaments were recovered (Figs. 2.30-2.32). The rich collection and varieties of antiquities reflect the nature of society that existed in the Early Historic period.

Cultural Period

Based on the material evidence controlled with AMS dates three-fold cultural events could be discerned, namely the Iron Age, Early Historic and Historic periods. The 52 AMS dates (23 samples of ASI and 29 samples of TNSDA) obtained in different stratigraphical

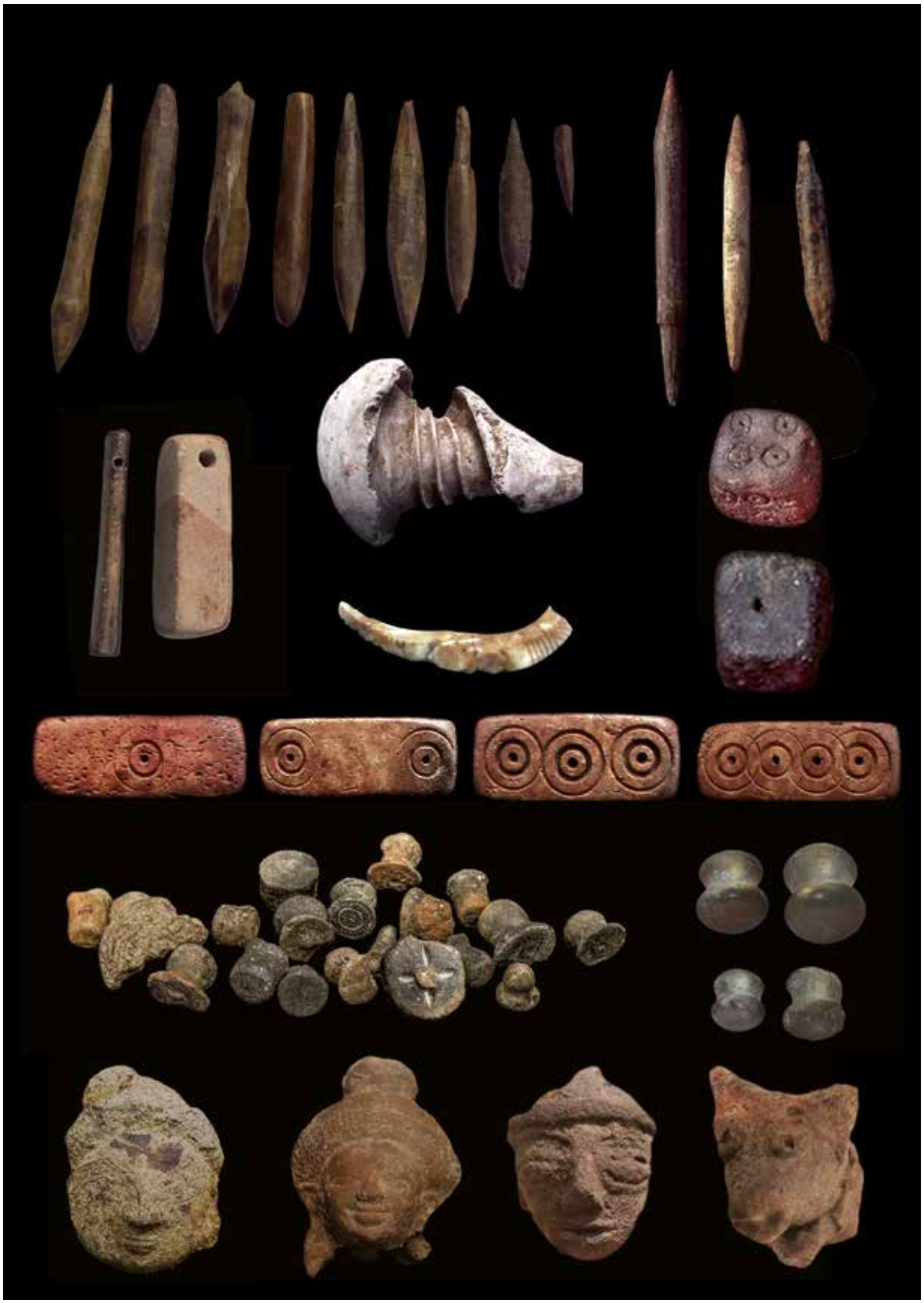


Fig. 2.30. Keeladi: Bone tools, ivory and shell objects

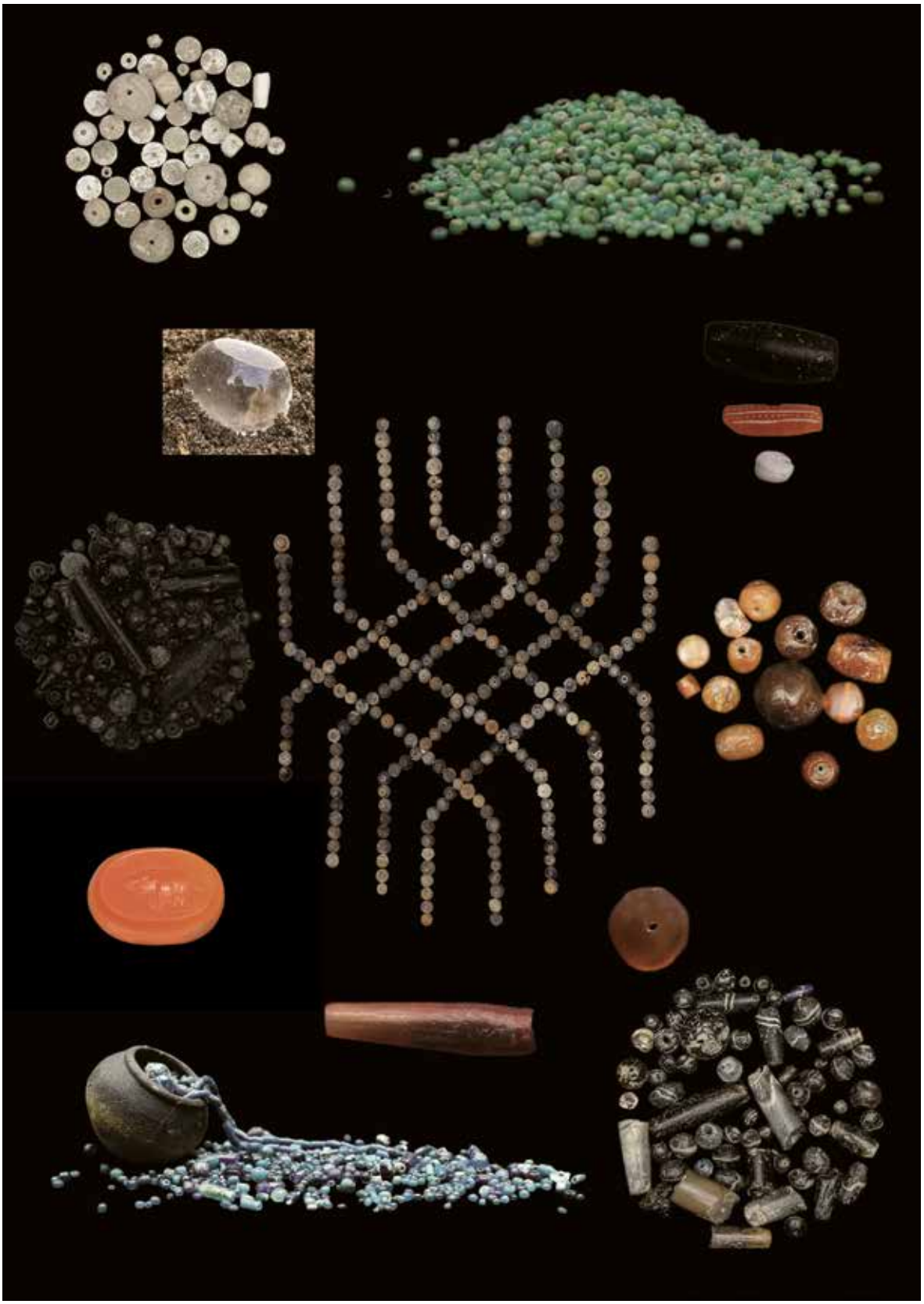


Fig. 2.31. Keeladi: Beads

Fig. 2.32. Keeladi: Metal objects

layers of the Early Historic period placed the time range of the conventional date between 580 BCE and 200 CE, and the calibrated date of 679 BCE and 312 CE. The thin deposit encountered below the Early Historic level could not be dated due to the non-availability of the sample. The Iron Age (Period I) is marked with thin black-and-red ware and graffiti marks. This period is devoid of any major structural activities. The lowermost level reveals a comparatively lesser number of inscribed potsherds and a greater number of graffiti potsherds. The early Historic period (Period-II), falling between the 7th and 6th century BCE down to the 2nd and 3rd century CE, witnessed a large number of antiquities. It represents the presence of structural remains found along with a large number of Tamil-Brahmi inscribed potsherds, black-and-red ware, russet-coated painted ware, white painted black-and-red ware, rouletted ware, NBPW, decorative potteries, etc (Fig. 2.33). All the buzzing activities of the site may be ascribed to this period only. In this period, a mature urban character existed, and almost all mature period structural features occurred only at this level. The Historic period (Period-III) consists of thin cultural deposits with the occurrence of red ware, coarse red and crude variety of black-and-red ware, and coins of Sundara Pandya of the 13th century CE. The most distinctive variety discerned from this level was the wide-mouthed redware bowls with flat and round bases, being fabricated on a slow wheel.

Inscribed potsherds

Keeladi yielded both graffiti-bearing and Tamil̲i-inscribed potsherds (Fig. 2.34). All of them were post-firing in nature and mostly engraved on the shoulder portion of the pots, making them readable and visible. In total, 3782 (ASI-2447 and TNSDA-1335) graffiti-bearing potsherds were collected. Out of 2447 graffiti potsherds of the ASI collection, 797 were documented leaving aside unrecognised single scratches, and the TNSDA collections were fully documented. In the case of Tamil̲i inscribed potsherds, 172 sherds (ASI-108 and TNSDA-64) were documented. Most of them carry personal names such as ātaṉ, tisaṉ, utiraṉ, sātaṉ, akaṉ, kuviraṉ, kuviraṉāta[ṉ], ūrata[ṉ], katiraṉ, muyaṉ, sampaṉ, pērayaṉ, gutasa, kuviraṉ-kuṟavaṉ, cāntāṉa[ṉ], cēntāṉavati, ērāvātaṉ, campaṉ, utīraṉ, etc., Most of the Prakrit names were Tamilized and two or three pure Prakrit names of Sri Lankan origin also occurred. The very interesting feature or observation is that most of the personal names hardly find their place in the Sangam literature. Unlike literary names, the inscribed potsherds provided another dimension of the personal names of the contemporary world. The sheer quantity of the inscribed sherds suggests that the society was a literate society. The major portion engraved on ceramics belongs to Red Ware/Coarse Red Ware (13%), Red Slipped Ware (27%), Black and Red Ware (53%), Black Ware (3%), Russet Coated Painted Ware (3%), White Painted Ware (0.05%) and Rouletted (0.05%) Ware.

Fig. 2.33. Keeladi: Black-and-Red ware pots

Fig. 2.34. Keeladi: Graffiti and Tamil̲i inscribed potsherds

Fig. 2.35. Keeladi-Agaram: Excavated trenches

Fig. 2.36. Keeladi-Kondagai: Excavated urns

In addition to Keeladi, the excavation activities also extended to three other sites within the vicinity, namely Agaram, Manalur and Kondagai. The three sites, Agaram, Manalur, and Kondagai, are within 1 km of Keeladi and have been considered part of Keeladi. They are regarded as distinct localities within the broader Keeladi site. From the extensive excavations spanning nine seasons at Keeladi (2014-15 to 2022-23), four seasons at Kondagai and Agaram, and two seasons at Manalur, archaeologists uncover and understand the rich historical artefacts, structures, and socio-cultural remains that lie buried beneath the surface.

The excavations at Agaram (9º51'5.45" N and 78º12'33.57" E) revealed the existence of microlithic tools. One phenomenon observed in the southern part of Tamil Nadu is that the majority of the excavated sites, such as Mangudi, Sivagalai, Vembakottai and Adichanallur, met with microlithic tools below the Iron Age level by bypassing the usual Neolithic phase. The same cultural factor is witnessed at Agaram (Fig. 2.35). After the microlithic tools, the Early Historic cultural items were displayed. The excavations at Manalur (9°51'52.72" N; 78°12'41.10" E) in the years 2020 and 2021 suggest possible historical and cultural connections, warranting excavation to uncover the historical and cultural context of the region.

Graffiti and Tamil

The burial site Kondagai (9°50’41.87” N; 78°10’51.07” E) is identified as the burial ground of Keeladi. In four seasons of excavations (2020, 2021, 2022 and 2023), 161 urn burials and 44 extended burials were traced and identified, which elucidates the burial traditions and cultural practices (Fig. 2.36). Among the antiquities, 1 ivory ring, 76 carnelian beads, 1 iron bangle and 21 iron implements, besides earthenware grave goods of black-and-red ware, black slipped ware, red slipped ware, and red ware could be cited.

Overall, the excavations at Keeladi, Agaram, Manalur, and Kondagai have contributed significantly to our understanding of the ancient urban settlement that flourished along the river Vaigai. These archaeological ventures have unambiguously illuminated various aspects of the civilization, including the literacy of the common man, the antiquity of the Tamil script, the economic activities, social condition, cultural practices, palaeoenvironment and technological advancement. The exposed structures, artefacts and ecofacts generated much enthusiasm among scholars, administrators and the general public. The ninth season of archaeological excavations is in progress, and it may add further cultural value to the site.

5. Kilnamandi

Kilnamandi (12°22’36.11”N 79°31’24.56” E) is a small village located in Vandavasi taluk of Tiruvannamalai district in Tamil Nadu, India. The village is located 65 km northeast of the district headquarters, 18 km southwest of Vandavasi, and 23 km northeast of Gingee. The Iron Age megalithic graveyard (12°23’18.6″ N, 79°29’45.9″ E) is located 3.27 km southwest of the present Kilnamandi village (Fig. 2.37). Dolerite dykes (Black Granite) are also noticed cutting across the country rocks (GSI, 2011) (Figs. 2.38-2.39). There are more than 50 graves covering 55 acres of barren land (Fig. 2.40). Two seasons of excavations were carried out by the Tamil Nadu State Department of Archaeology in 2023 and 2024, and a third season of excavation is in progress (Gnanaraj *et.al.,* 2023). Five Localities (Locality-1 to 5) have been identified, and excavations are being carried out in two localities (Locality-1 and 2) in the first season and another two localities (Locality-3 and 5) in the second season. Locality-1 is the burial ground, Locality-2 is the burial campsite, Locality-3 and 4 are the habitation mounds, and Locality-5 is the iron smelting area.

Excavations in the graveyard (Locality-1)

Twelve graves (MEG-I to MEG-XII) have been selected in the first season (2023) and five graves (MEG-XIII to MEG-XVII) in 2024. These burials can be broadly categorized into two types: cist burial with sarcophagus (type-1) (Figs. 2.41-2.42) and pit burial with

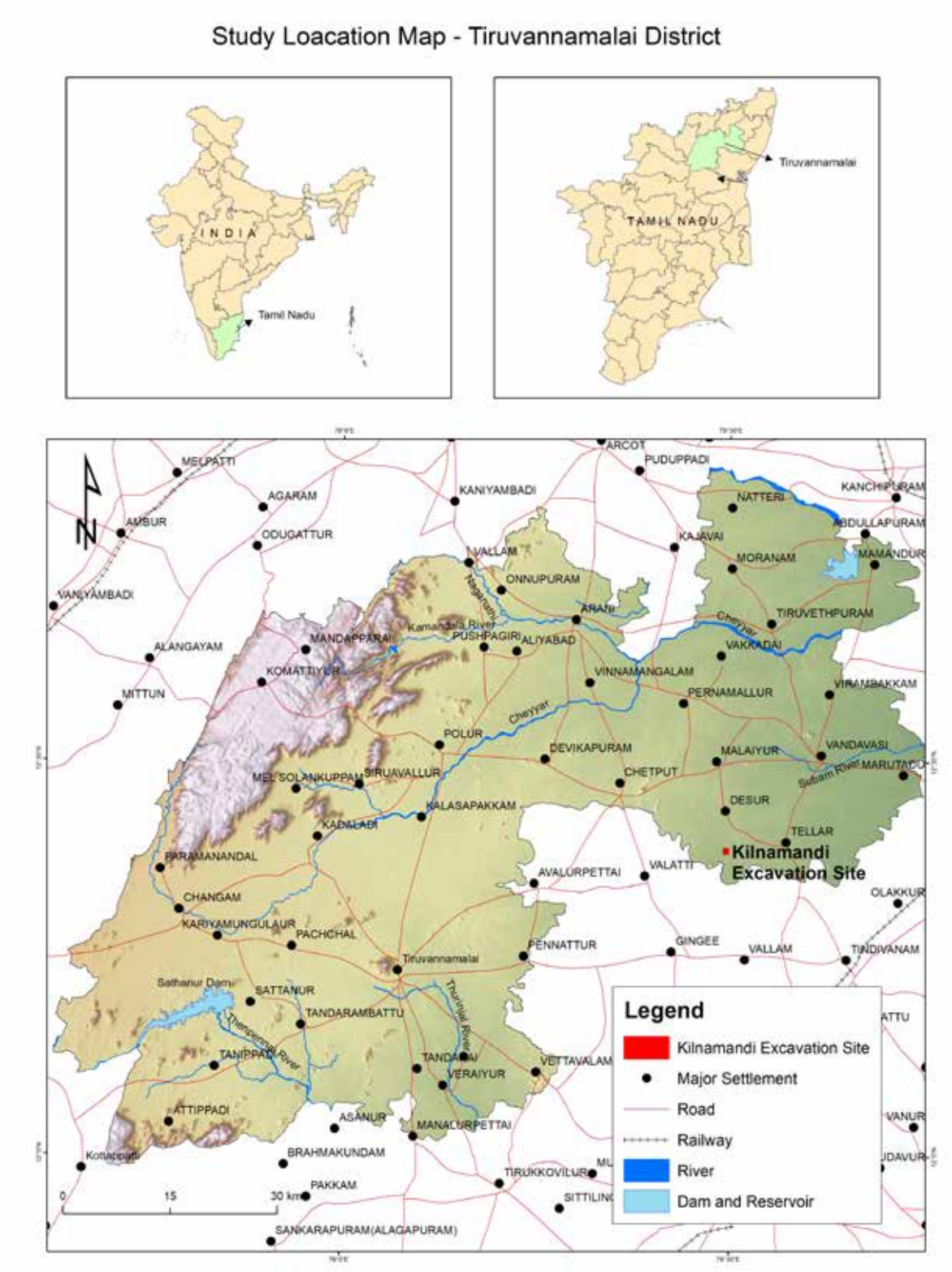


Fig. 2.37. Kilnamandi: Location of the site

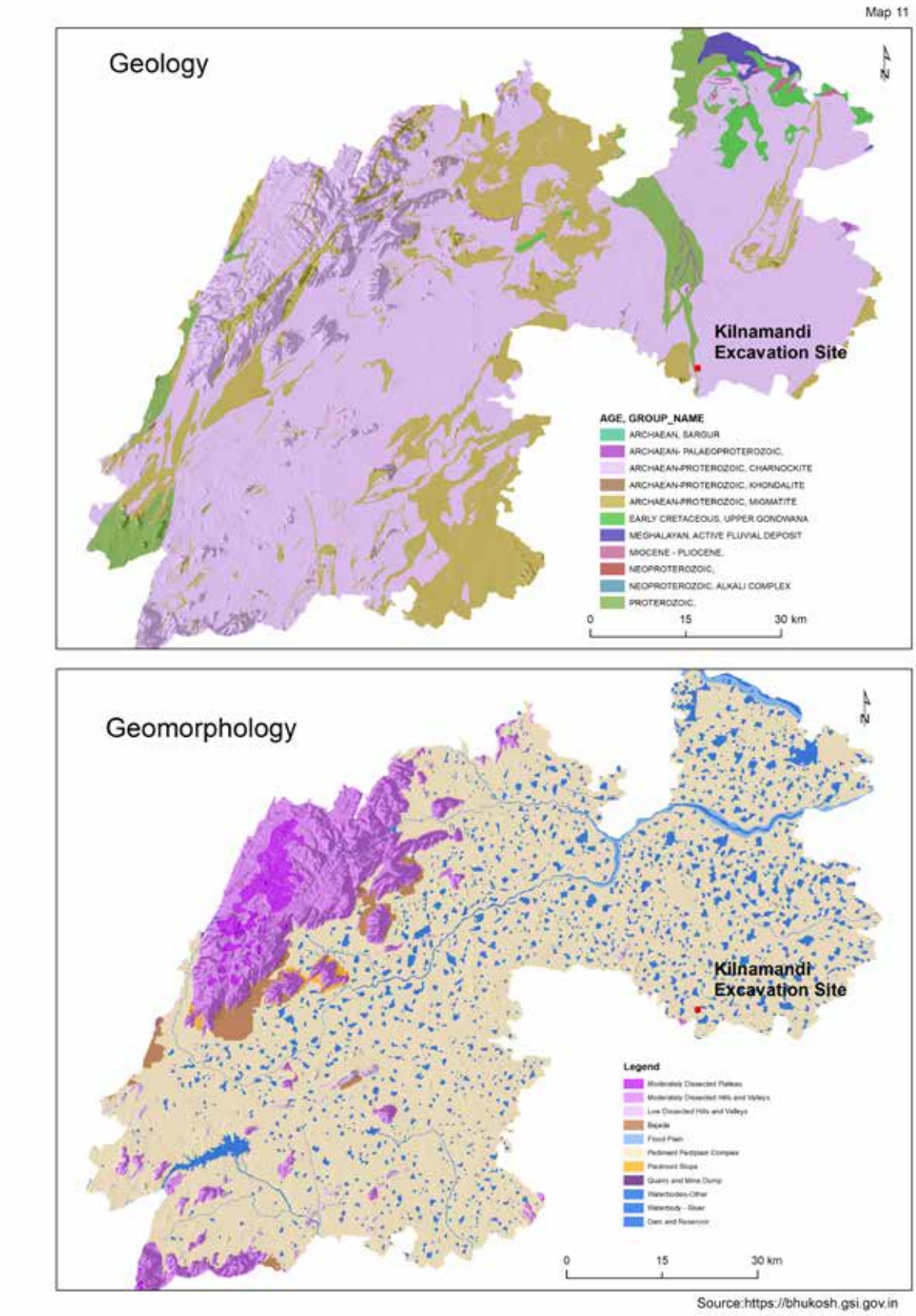


Fig. 2.38. Kilnamandi: Geology of the Tiruvannamalai region

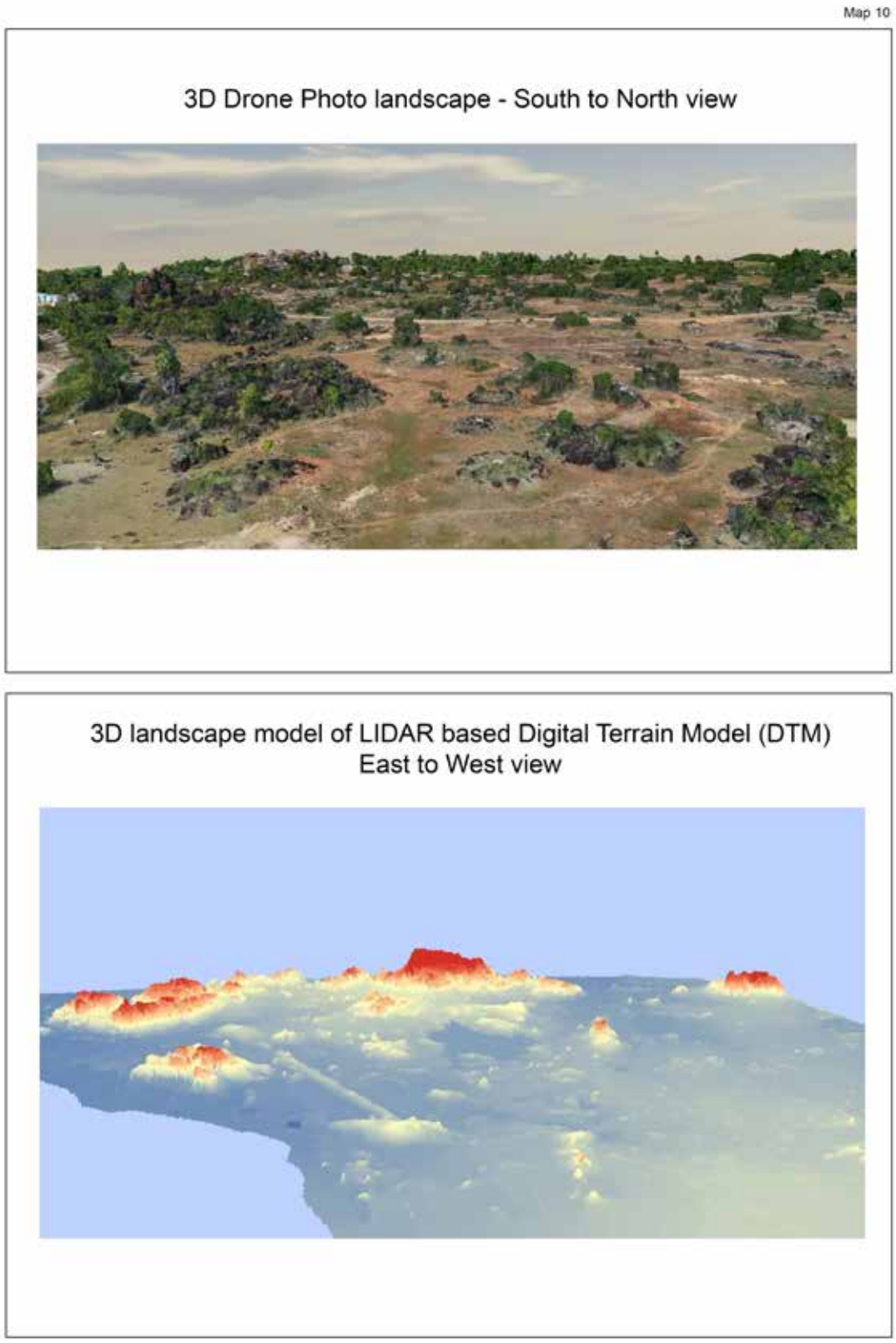

Map 10
3D Drone Photo landscape - South to North view
3D landscape model of LIDAR based Digital Terrain Model (DTM)
East to West view

Fig. 2.39. Kilnamandi: Bird view of the landscape

Fig. 2.40. Kilnamandi: General view of the graveyard

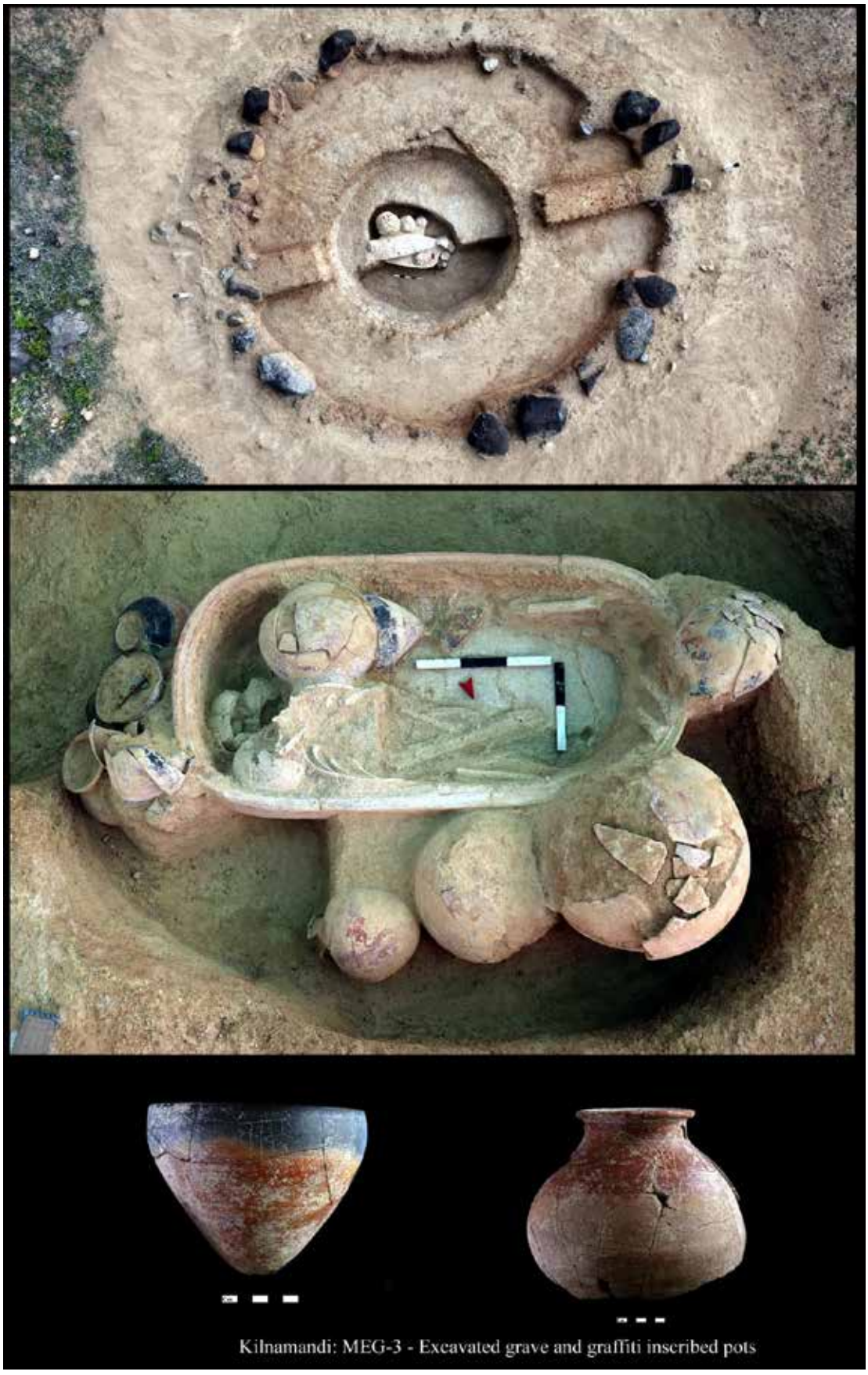


Fig. 2.41. Kilnamandi: Excavated grave MEG-III

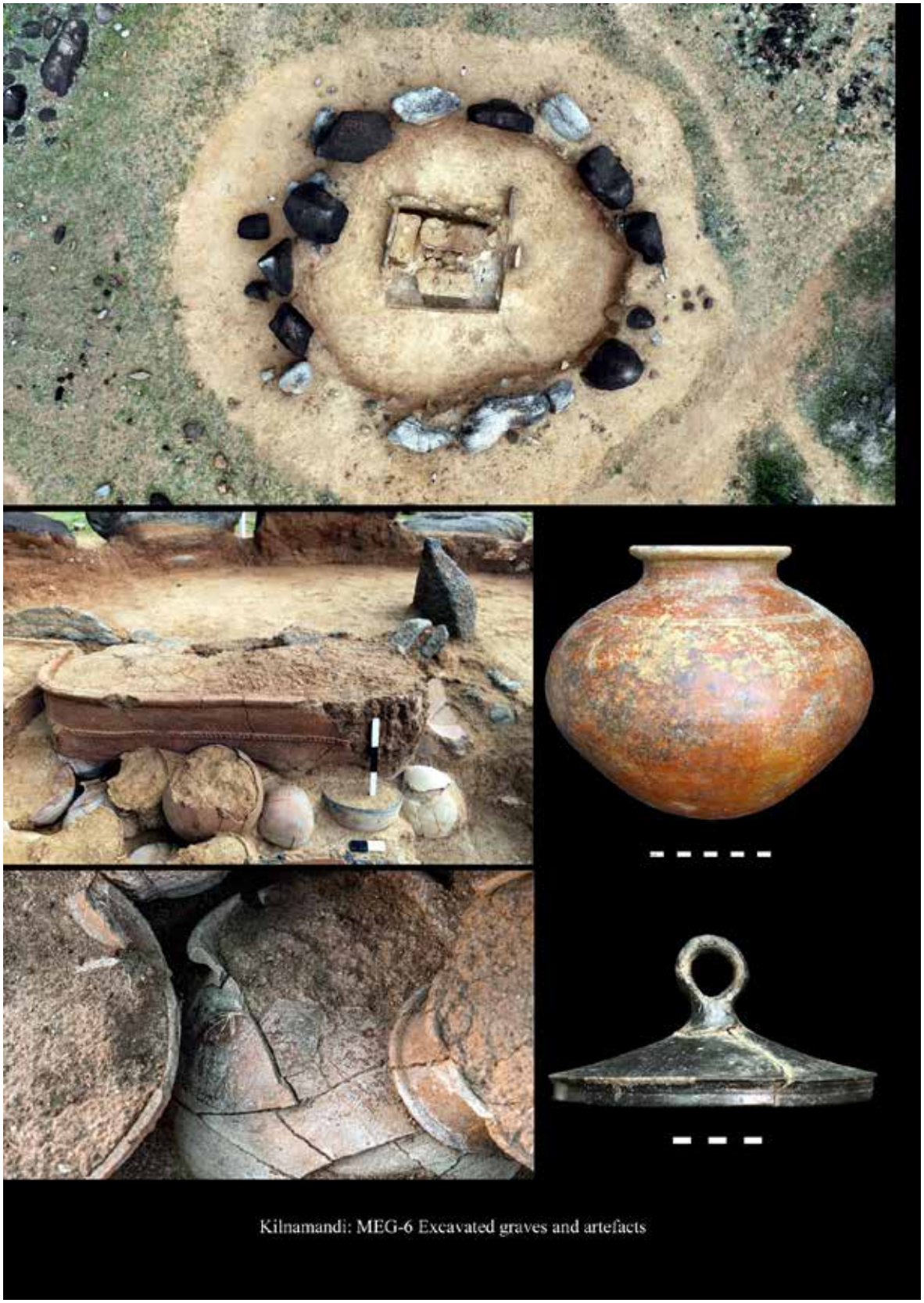


Fig. 2.42. Kilnamandi: Excavated grave MEG-VI

sarcophagus (type-2) (Fig. 2.43), which can then be further subdivided into burials with and without cairn circle and capstone. Out of 72 excavated Iron Age megalithic burials, 14 of which are classified as type-1 and the other 3 as type-2.

There was a total of 29 sarcophagi found in the 17 excavated burials, only six of which are still intact; the others have collapsed under the weight of the thick earthen heap that was placed on top of them. A burial can contain anywhere between one and three sarcophagi. Most of the Type-1 burials included one to three sarcophagi, while Type-2 burials only contained one. The sarcophagus found here varies in size from small to large (Figs. 2.44-2.45). These sarcophagi are of red ware, handmade, and mostly have an oblong tub shape with legs that range in number from 6 to 12. Most sarcophagi have a chain-like design made of finger impressions that run horizontally below the rim and vertically in each of the four corners. In some cases, the design included inverted hooks that were likely meant to hold the lid, but which were missing. Pre-firing holes were found at the base of the sarcophagus. The inner portions of the sarcophagus were filled with loose earth, which caused the object inside to crumble. The sarcophagus contained offering pots, iron tools, beads, and human bone fragments.

The findings

Excavation in the burial ground at Kilnamandi yielded a good number of associated grave goods, which are mainly of potteries of different varieties, graffiti marks, antiquities, and fragmentary human skeletal remains.

The pottery includes typical Iron Age black-and-red ware, black slipped ware, red ware, and red slipped ware (Figs. 2.46-2.47). These potteries were collected from both inside and outside the sarcophagus. The major types of black-and-red ware found here are bowls, dishes, pots, and miniature vessels. The black slipware consists of only a ring stand and a lid knob. The red ware and red slipped ware are confined mainly to large and medium-sized vessels, represented by ring stands, three-legged jars, and globular pots.

A total of 43 post-firing graffiti-bearing potsherds engraved on the shoulder portion of the pots were found here, which are predominantly on black-and-red ware and red slipped ware. The common graffiti marks found here are a fork-like sign (two oblique lines meeting a central vertical line at the top, which somewhat looks like a three-pronged fork). This symbol mostly occurs in pairs. Another one is two semi-concentric circles arranged in a U-form. A notable piece of graffiti was found in the grave of MEG-II and VI, and it consists of two vertical lines with a wavy line superimposed on them.

Fig. 2.43. Kilnamandi: Excavated grave MEG-VI and VIII

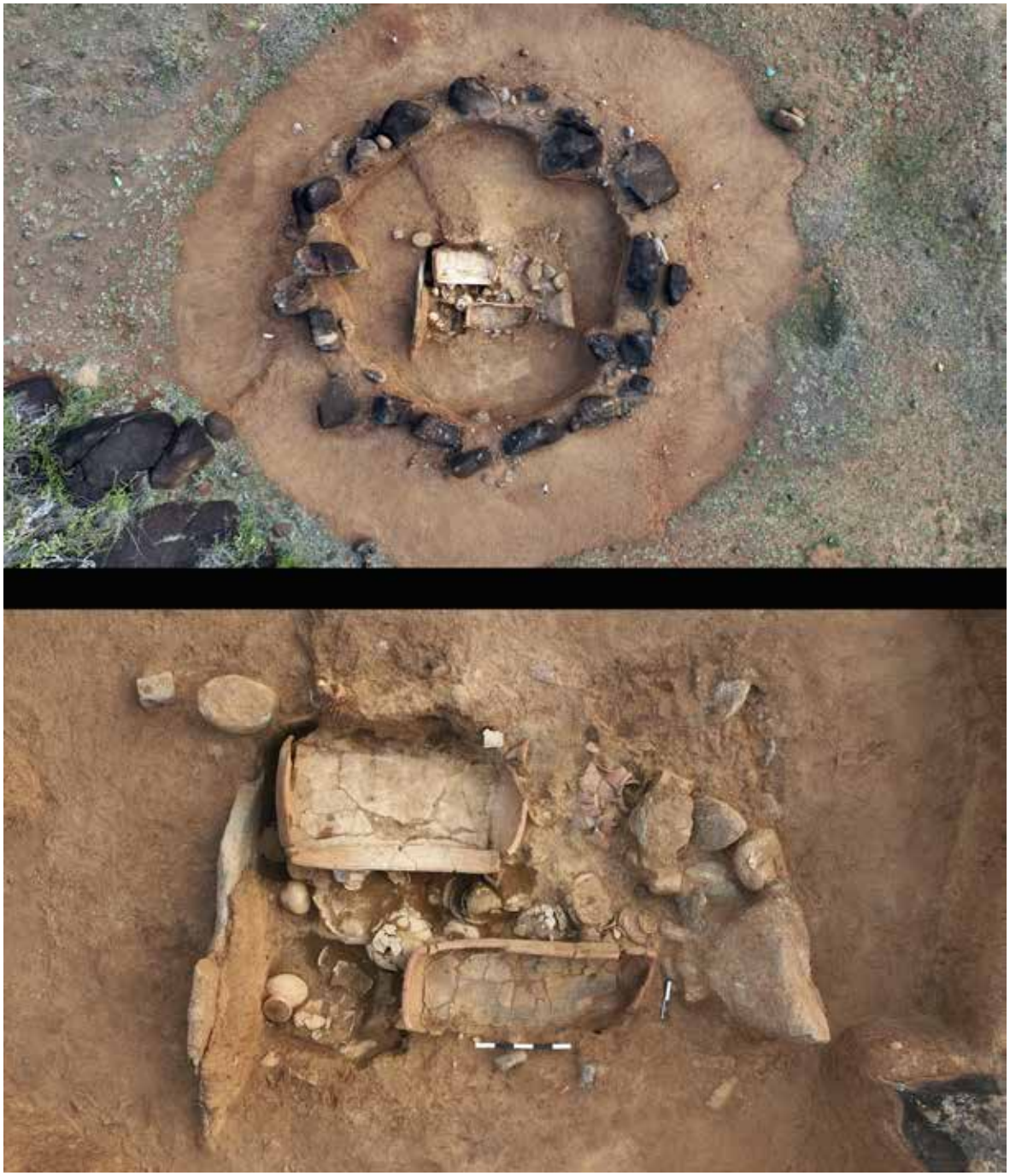


Fig. 2.44. Kilnamandi: Sarcophagus

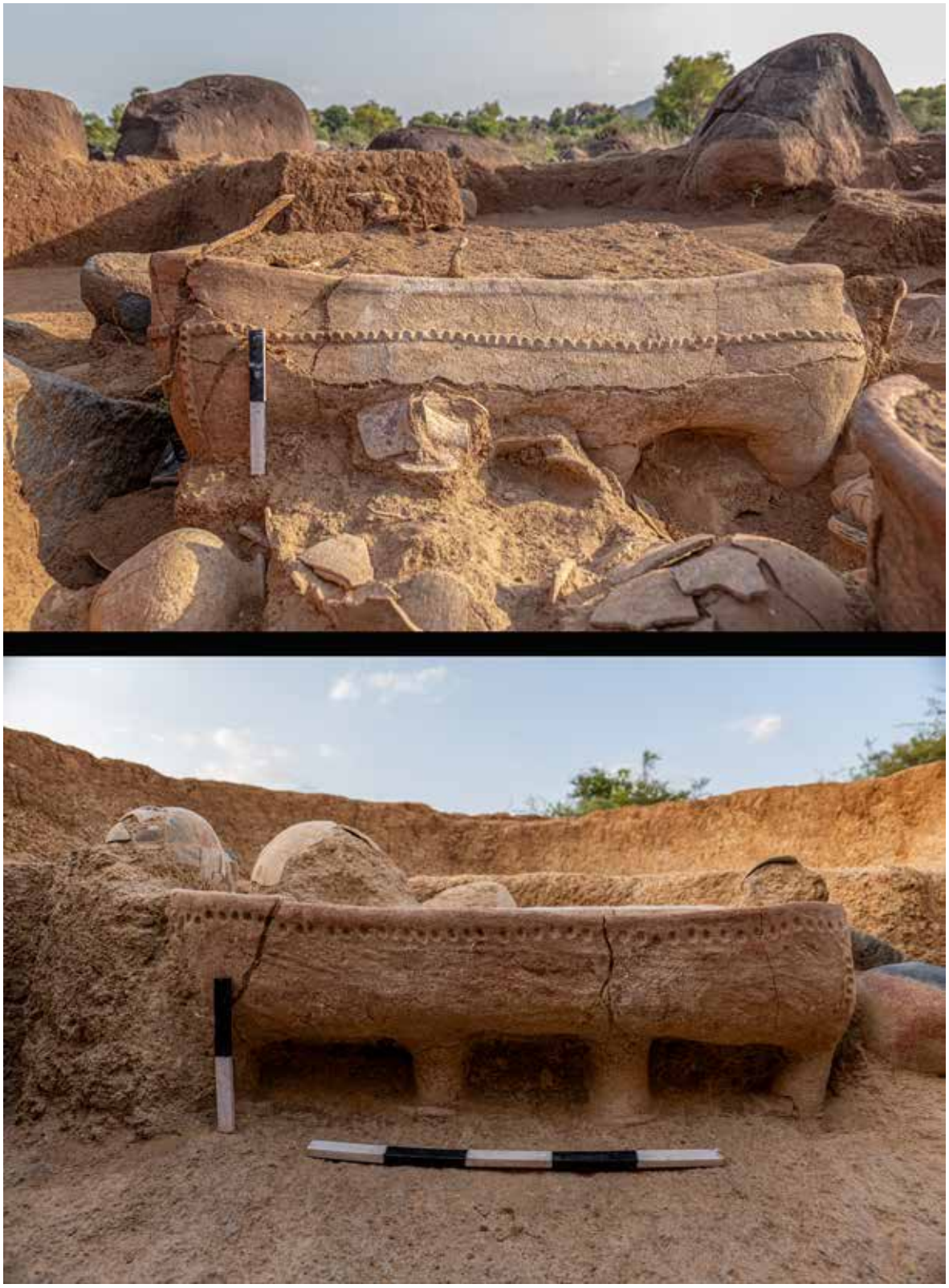


Fig. 2.45. Kilnamandi: Sarcophagus

Fig. 2.46. Kilnamandi: Grave goods

Fig. 2.47. Kilnamandi: Grave goods

Graffiti and Tamil

Antiquities from here are found both inside and outside the sarcophagus, which can be classified as beads (Fig. 2.48), iron objects (Fig. 2.49), and stone objects, which are a total of 50 in number.

Habitation cuttings

Locality-2 is a habitation mound located 300 meters southwest of Locality-1. Ten trenches were excavated in the first season (2023). These ten trenches were separated by a small granite hill. Six trenches on its eastern side and four trenches on the western side of the hill were excavated (Fig. 2.50). A total number of 47 antiquities, such as hopscotches, ivory beads, bone beads, gamesmen, copper rings, polished stone axes, and iron objects, have been unearthed. In addition to that, 45 graffiti-bearing potsherds were collected between 50cm and 70cm in which a fork-like sign is similar to that of the burial ground. The pottery types unearthed here are similar to those in the burial ground, and good numbers of iron slags are also found, suggesting that this could have been a contemporary habitation. Within the trenches on the eastern side of the hill are several pits that contain a high concentration of animal bones and black and red ware potteries that can be restored to their original form. The trenches on the eastern side of the hill have only two layers and a single floor level that is primarily composed of these types of potteries, similar to the burial ground. These excavations have also revealed a few post holes, which collectively imply that this area may have served as a burial camp.

Locality-3 (Nerkunam) is a habitation mound located 1 km southwest of Locality-1. Four trenches laid here met with 11 antiquities, consisting of a terracotta wheel, terracotta figurine, soapstone object, hopscotch and terracotta gamesman. Features such as pits and post holes were identified. The pottery is mostly of red ware, red slipped ware, and coarse red ware. These potteries probably belong to the Early Historic phase or are still later. The excavation conducted in Locality-5 (Mahamai Tirumani) by laying four trenches met with evidence of iron smelting. Broken tuyeres, iron slags, as well as associated red coarse ware, black and red ware pottery, and evidence of burning activities were noticed here.

Chronology

The sample collected from the grave containing a sarcophagus (Meg-III) yielded a conventional date of 1450 BCE (3400±30 BP) (Beta 666752) and the calibrated date falling between 1769 BCE and 1615 BCE (93.3%) with a midrange value of 1692 BCE was obtained. The most significant feature of this AMS date (1692 BCE) is that a sarcophagus burial was dated for the first time in Tamil Nadu.

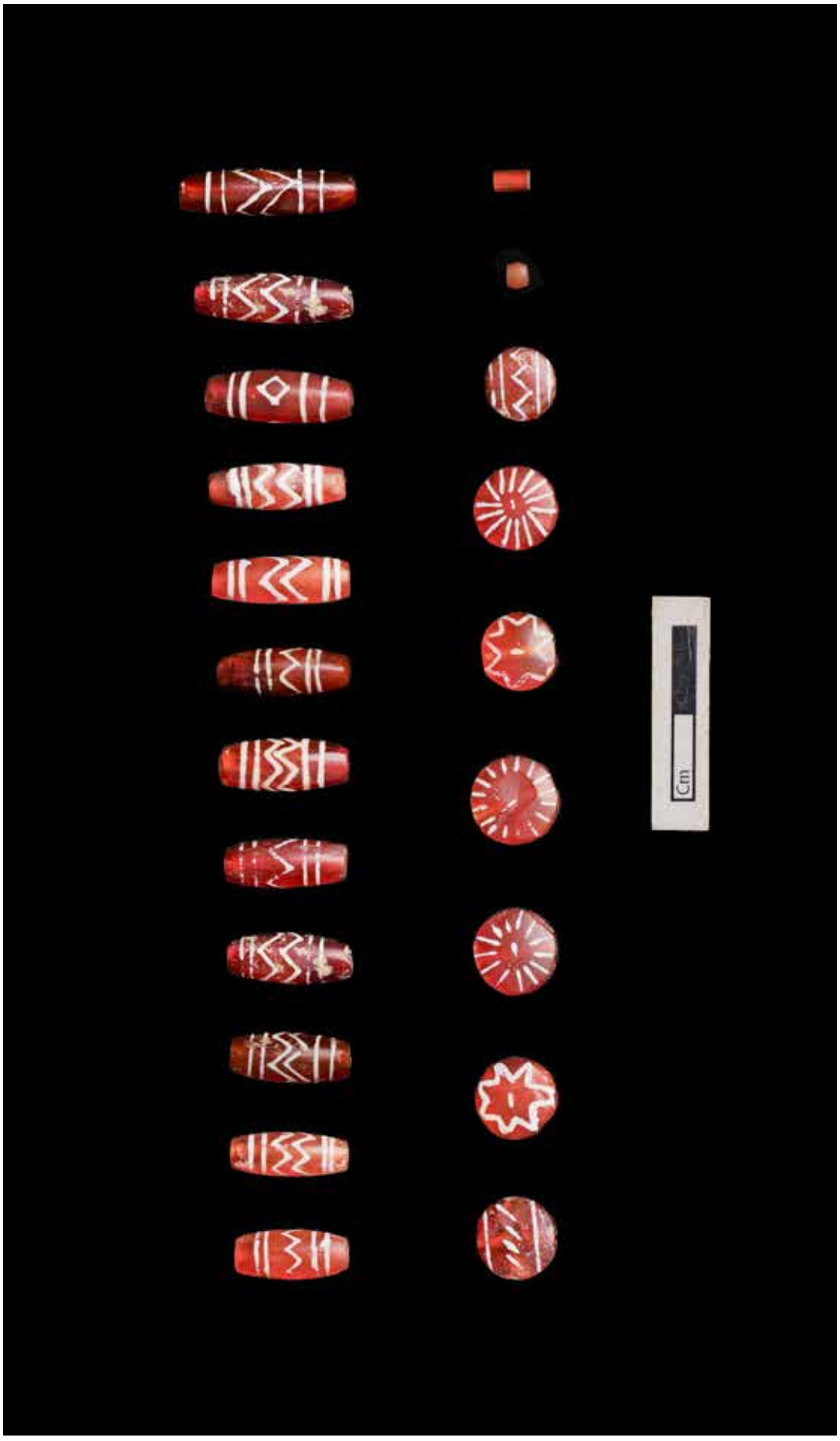


Fig. 2.48. Kilnamandi: Etched carnelian beads

Fig. 2.49. Kilnamandi: Beads and iron objects

Fig. 2.50. Kilnamandi: Excavated habitation cuttings

6. Kodumanal

The Early Historic habitation-cum-burial site Kodumanal (11º6'42" N; 77º30'51" E) lies about 15 km west of Chennimalai, a famous weaving centre and about 40 km southwest of Erode, an important industrial city, on the north bank of the river Noyyal, a tributary of Kaveri, in Perundurai Taluk of Erode district, Tamil Nadu. It is located on the ancient trade route connecting the Chera capital Karur (Karur-Vanji) with the international call of port Musiripattinam on the west coast through the Palaghat gap. This trade route is known as *Rājakēsari peruvaḻi* and *Koṅga-p-peruvaḻi* in medieval times. All the Roman coin hoards found at Karur, Kodumanal, Kattanganni, Sulur, Vellalur and Eyyal are located on this trade route, thereby forming much earlier. The habitation mound and the graveyard, respectively, cover an area of 15 and 40 ha. The Sangam literature *Pattiṟṟupattu* refers to this place as *Koḍumaṇam* known for its semi-precious stone bead-making centre (*Pattiṟṟupattu* 67 and 74). The site was first explored by Srinivasa Desikan in 1961 and reported only the megalithic graves but failed to record the habitation mound (*IAR* 1960-61:18). Pulavar S.Raju (formerly Professor of Epigraphy at Tamil University), then School Teacher, re-explored the site by visiting several times and collected a large number of antiquities and displayed them in the archaeological museum at Kalaimahal Kalvi Nilayam, Erode. A 15th century CE inscription engraved on the slab standing in the habitation mound issued in the reign of Umattur chief Viranarayana Udaiyar (1489-1500 A.D.). It refers to a sale deed executed between the Nanjanacettiyar and Avanasi Linkayyar. A ruined Siva temple constructed in the medieval period is found on the southern bank of the Noyyal River. In addition to that one Vishnu temple was also constructed near this temple during the Vijayanagara-period. Fragments of Vijayanagara period inscriptions were also noticed. On the bank of the Noyyal River, a small Durgaiamman temple was also constructed during the Vijayanagar period. A Durga sculpture is noticed near this village. It may belong to the 13th century CE.

Excavations

In 1980, R.Nagasamy of TNSDA carried out a trial trench at the request of Pulavar. S. Raju. Subsequently, K. Rajan conducted an intensive study in 1984 and exposed its archaeological significance. The potentiality of the site led to seven seasons of excavation in the years 1985, 1986, 1989, 1990, 1997 by the Tamil University and in 2012 and 2013 by Pondicherry University (Rajan 1990:95-102; 1991b:111-112; 1996:72-86; 1998:65-76; 2015), five seasons of excavations in the years 1997, 1998, 2019, 2020 and 2021 by the TNSDA and in 2018 by the ASI (Sriraman 2020). Nearly 13 seasons of excavations were carried out by four organizations both in the habitation mound and graveyard locally known as *Nattakkadu*, *Selavaranakadu* and *Sampalakadu* (Fig. 2.51). Altogether, 3075 sq m area was excavated in

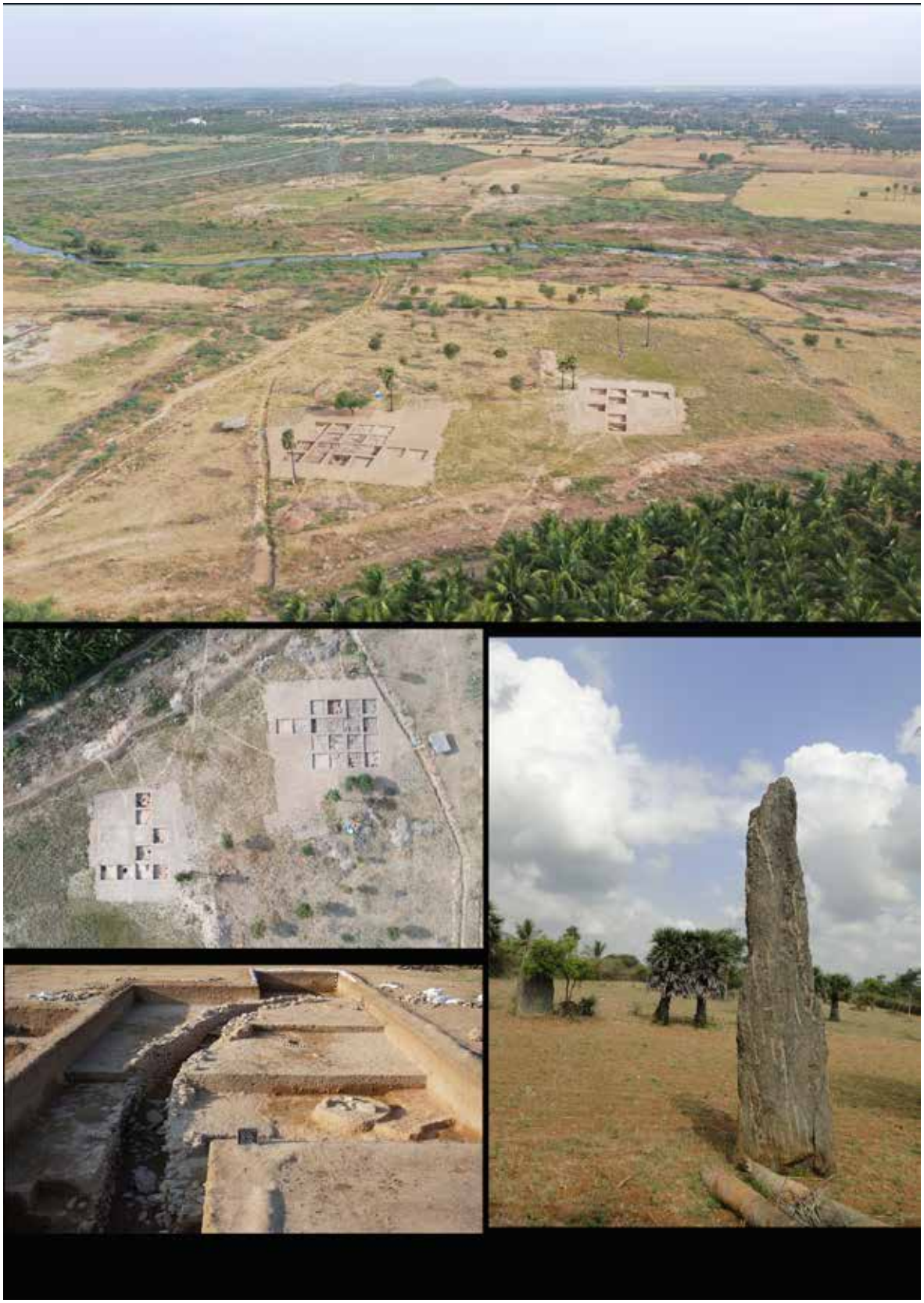


Fig. 2.51. Kodumanal: General view of the site

about 16 ha of habitation mound constituting merely 1.92%. Nearly 102 trenches were laid in the habitation area and 31 Early Historic megalithic graves were opened in the cemetery area. The excavations yielded extensive data on the nature of the settlement, gemstone industry, method of iron and steel production, copper industry, weaving and shell industry, type of graves and their architectural features, the types and placement of grave goods, the mode of burial, the usage of graffiti marks and Brahmi characters, the stratigraphical position of the russet coated painted ware, rouletted ware, northern black polished ware (NBP) and punch-marked coins (PMC) (Figs. 2.52-2.53), the extent of internal and external trade and other interrelated topics. In total, 1109 Tamil̲i (Tamil-Brahmi) inscribed potsherds (TU-PU 551+ASI 375+TNSDA 183= 1109) and 2622 (TU-PU 598 and TNSDA 2024= 2622; Data on ASI graffiti sherds are not available) graffiti bearing potsherds collected from the habitation cuttings and an inscribed potsherd reading *visāki* (re-read as *visākanan*) was collected from a transepted cist, which clearly indicates that the erection of megalithic monuments continued in the Early Historic period. Based on five AMS dates, the chronology of the site is pushed back to the 5th century BCE, and the total cultural deposit is assigned to Early Historic times. Thus, the associated burial complex consists of more than 150 cairn circles that were also placed under the Early Historic period.

Stratigraphy

On the basis of cultural material, ceramics, palaeography of the Tamil̲i script and AMS dates, the cultural deposit entirely belongs to the Early Historic period (Sangam Age) with two cultural sub-phases as Period IA and Period IB. The people of the cultural period IA were mostly artisans working on semi-precious stones particularly rock crystal and carnelian, and the people of the cultural period IB were generally cultivators. The statistical analysis of the pottery collected from the different strata yielded a very significant role of russet-coated painted ware. It is found that in the lower levels, the russet-coated ware on the one hand and plain black-and-red ware on the other are to be found in almost equal proportions, and all the pottery looks bright and polished. Dull or unslipped red ware occurs in equal proportion to red polished ware. In the middle levels, the painted ware decreases while plain ware increases. Moreover, we get comparatively thicker storage vessels in black-and-red ware. Beads made of semi-precious stones and rock crystal (Fig. 2.54), potsherds bearing graffiti marks and Tamil̲i letters, a crucible furnace, an iron smelting furnace, terracotta and glass objects and storage pits were recovered. This may suggest that during the earlier period, the emphasis was more on exploiting natural resources such as semi-precious stones and iron ore deposits.

The trenches opened in the mid part of the habitation mound yielded a maximum of eight floors. The square\rectangular gravel paved floors, plastered with lime, were generally

Fig. 2.52. Kodumanal: Northern Black Polished Ware

Fig. 2.53. Kodumanal: Silver Punch Marked Coins

Fig. 2.54. Kodumanal: Beryl, agate and carnelian beads

oriented north-south. The associate postholes dug into the periphery of the floors were found with sand. The absence of tiles and the occurrence of a few brickbats suggested a thatched roof. In a few trenches, in place of postholes, the base of a wall made of gravel was found. Even today, the use of lime plaster on the floor and red gravel for the construction of walls continues locally. The two floors of the bottom levels yielded round bins and might have served as a raised platform to support the grain storage vessels. A 25 m long parallel stone wall having a gap of 120 cm with fourteen courses running north-south was exposed. The breadth of the wall and the height measure respectively 100 cm and 210 cm. The floor of the wall is paved with stone slabs having steps running down towards a southerly direction. A brick structure measuring 3x2 m with a brick size of 41x24x7 cm and grooved tiles suggests that it is a part of the house.

The nature of floor level, availability of the antiquities, iron and crucible furnace, semi-precious stone chips, etc., clearly indicates that the artisans mainly manufacturing steel and semi-precious stone beads were concentrated in the northern zone of the habitation whereas the agriculturists in the central zone and agriculturists as well as the people involved in the iron industry occupied the southern part of the habitation.

Industrial activities

Iron and Steel Industry

The quite interesting and remarkable achievement of these people was the production of iron and steel. The evidence for these industries was found exposed respectively on the southern and northern parts of the habitation mound. The iron ores are extensively found in and around Chennimalai hill, the offshoot of the Salem range, which lies about 15 km east of Kodumanal.

Quite a number of iron smelting furnaces were exposed in the excavation (Fig. 2.55). The circular furnaces were distinguished by white colour, perhaps caused by high temperature. Around this circular base, numerous iron slags, burnt clay embedded with slag, vitrified brick bats, many tuyere pieces (terracotta pipes) with vitrified mouth and a granite slab were collected. Some of the iron slags stuck to the wall portion of the furnace had a smooth surface. The granite slabs found near the furnace seem to have been used for forging. Since the furnaces were dismantled to remove the bloom after smelting, it is hard to keep the furnaces intact. The absence of postholes, floor level, mere occurrence of potsherds and absence of any antiquities in this smelting area suggest that the iron smelting was done on the periphery of the habitation. A large number of iron objects of different varieties were recovered from the site (Fig. 2.56)

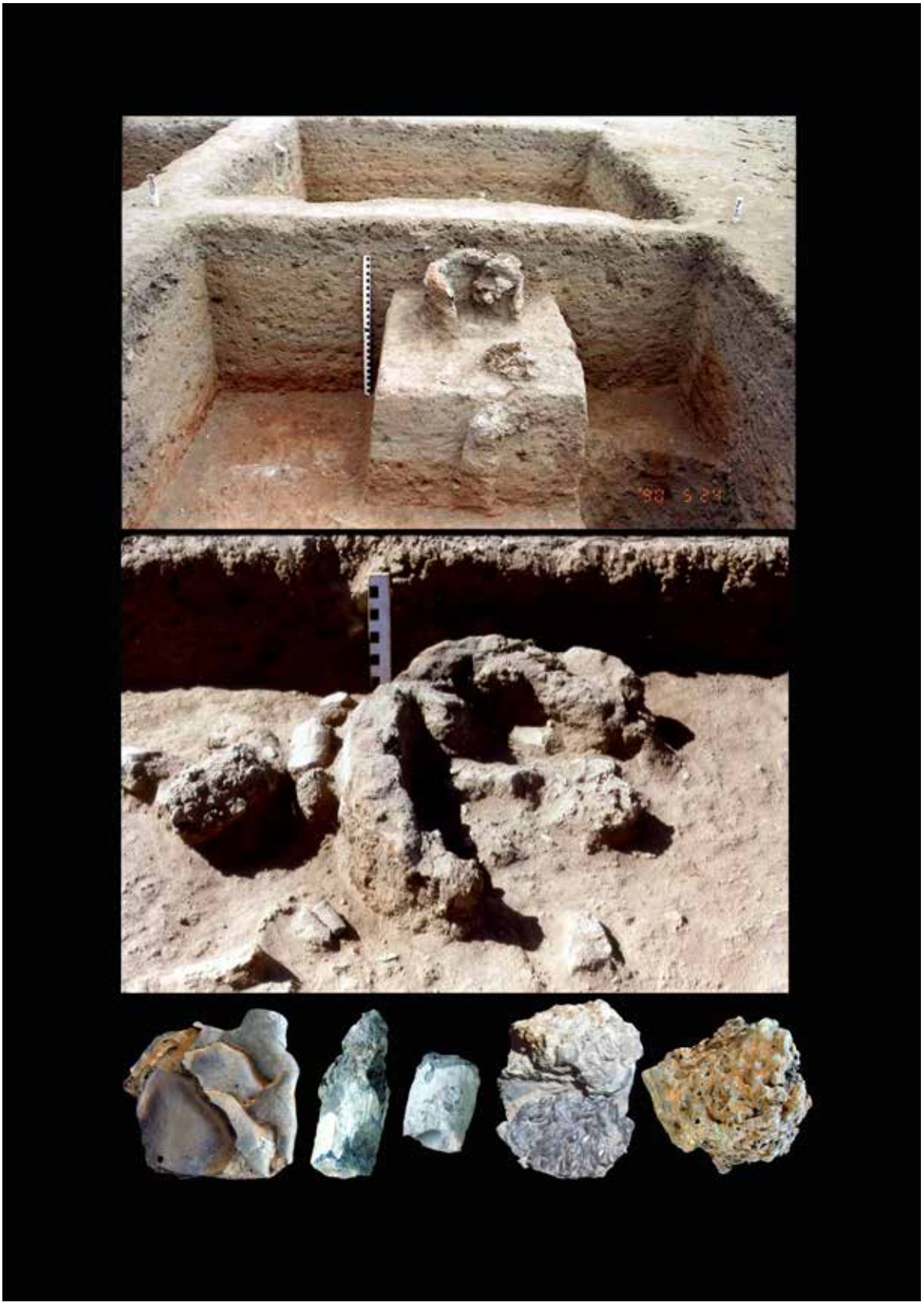


Fig. 2.55. Kodumanal: Iron smelting furnace

Fig. 2.56. Kodumanal: Iron objects

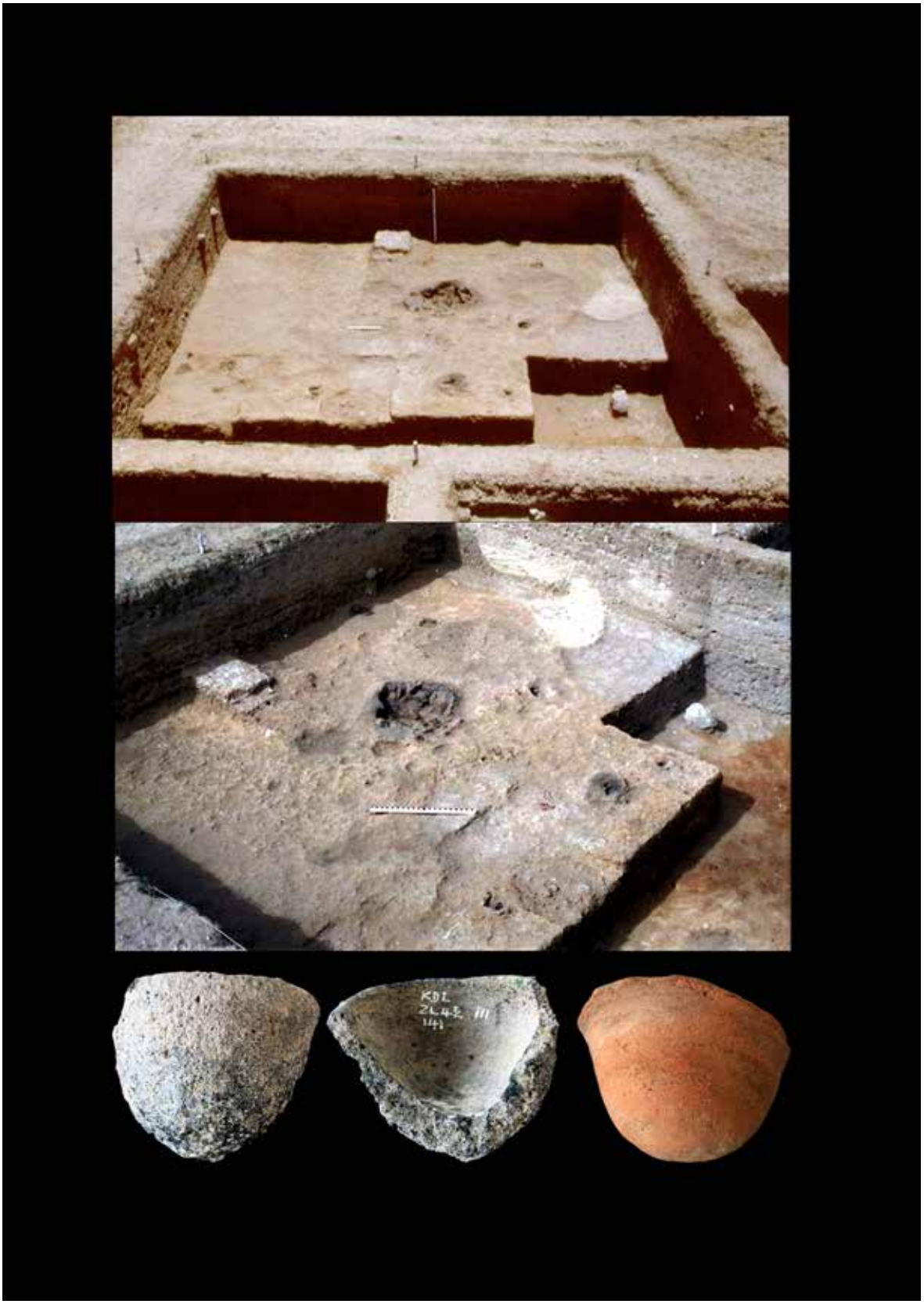


Fig. 2.57. Kodumanal: Crucible furnace

Graffiti and Tamil

Two crucible furnaces were identified. A large, somewhat oval-shaped main furnace surrounded by more than 12 small furnaces was exposed at the bottom-most level (Fig. 2.57). The small circular furnaces surrounding the big furnace, almost at regular intervals, had a 30 cm diameter at the mouth with a small hole or depression in the centre. These might have been used to heat longer crucibles removed from the bigger ones. The important findings are the small bowl-shaped crucibles in a vitrified condition found *in situ*.

The copper smelting furnaces were recovered from the mid-part of the settlement along with crucibles (Fig. 2.58). Several copper objects and high-tin bronze objects unearthed at Kodumanal support the existence of the copper smelting industry (Fig. 2.59).

Gemstone Industry

Another important economic mainstay of these people was the gemstone industry (Fig. 2.60). The area is known for its semi-precious stones. The famous beryl-bearing site Padiyur and sapphire-bearing hillocks Sivanmalai and Perumalmalai lie about 15 km south and southeast respectively, of Kodumanal. A quartz-bearing site, Vengamedu (*venga* means quartz and *medu* means mound) and Arasampalayam lie 5 km north and south, respectively, of Kodumanal. The absence carnelian and lapis-lazuli in this region suggests that carnelian might have been imported from Maharashtra and Gujarat and Lapis Lazuli from Afghanistan. Beads of sapphire, beryl, agate, carnelian, amethyst, lapis-lazuli, jasper, garnet, soapstone and quartz were unearthed from the habitation, whereas beads of carnelian, particularly the etched variety and agate were restricted to burials (Figs. 2.61). The beads in different manufacturing stages, finished and semi-finished, drilled and undrilled, polished and unpolished, were unearthed along with the raw material. The discarded chips, grooved stone slab and an interesting stone slab with a few grooved beads intact clearly demonstrate that these were manufactured locally at Kodumanal.

Other Industries

The occurrence of several intact terracotta spindle whorls pierced at the centre by means of an iron rod is clearly suggestive of cotton processing (Fig. 2.62). To strengthen this fact, a remarkably well-preserved piece of woven cotton was recovered from the site. The occurrence of a large number of conches, cut-pieces of conches, sawed conches, and shell bangles suggests that the shell industry also flourished at Kodumanal (Fig. 2.63).

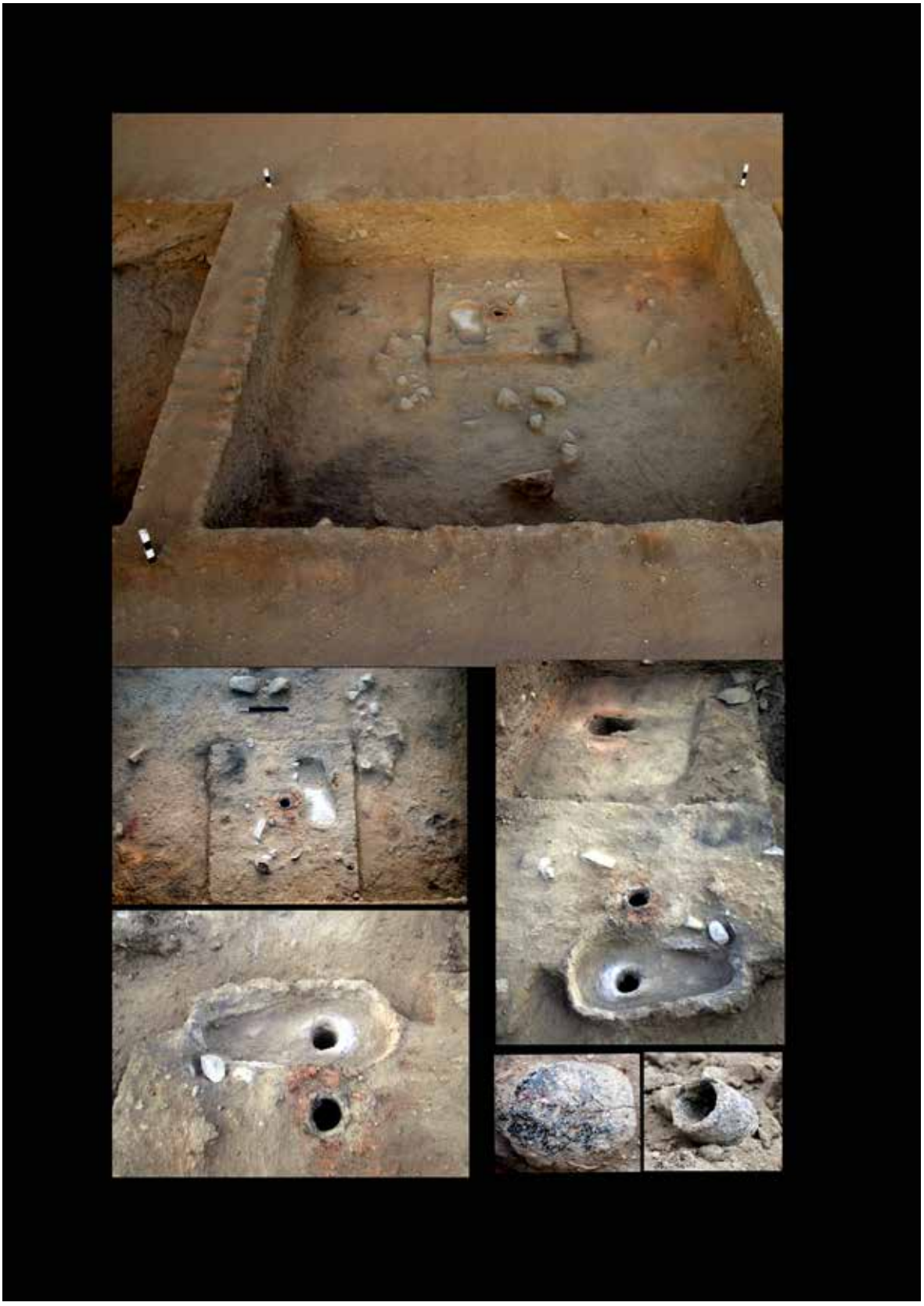


Fig. 2.58. Kodumanal: Copper smelting furnace

Fig. 2.59. Kodumanal: Copper objects

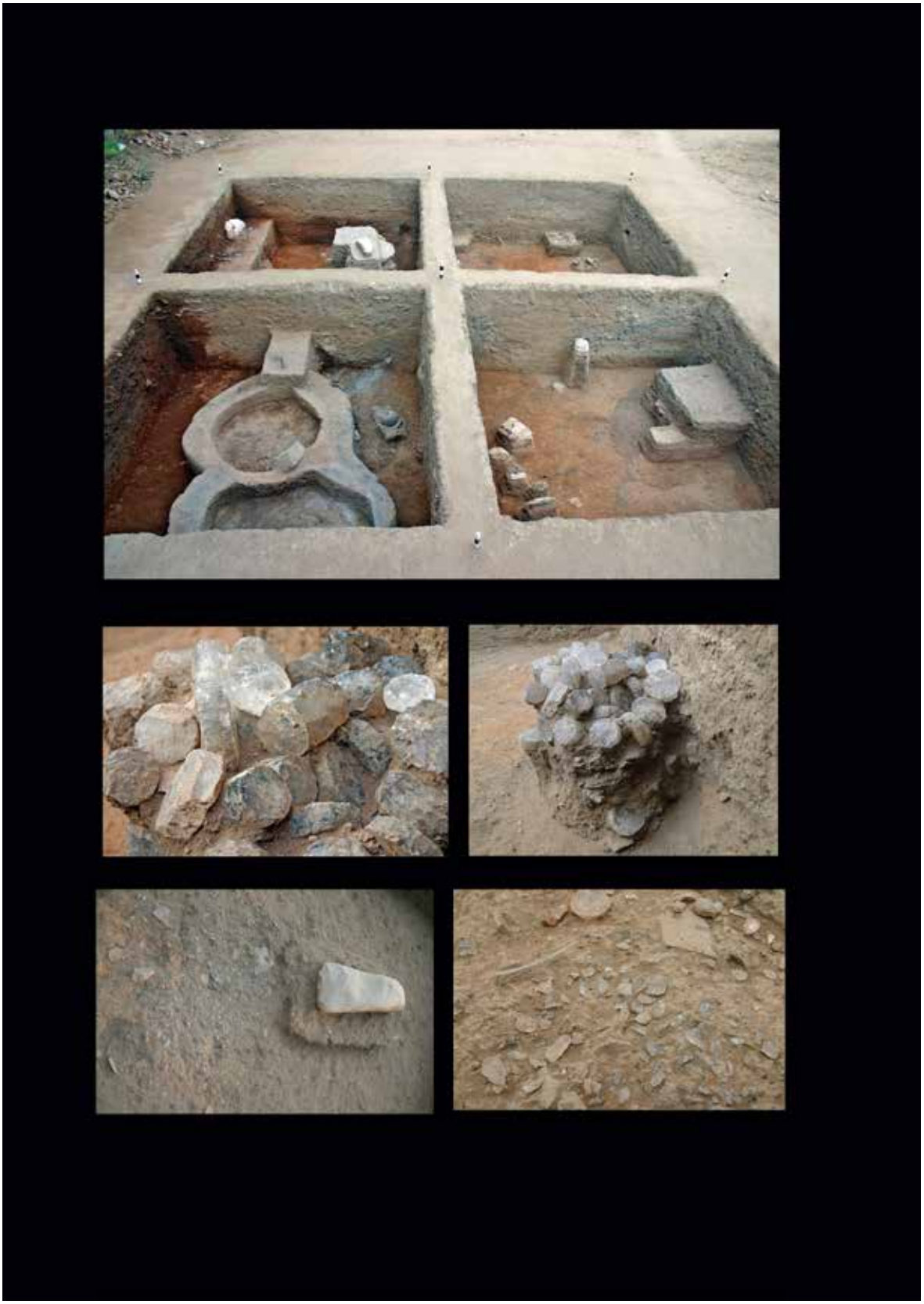


Fig. 2.60. Kodumanal: Gemstone industry

Fig. 2.61. Kodumanal: Carnelian beads

Fig. 2.62. Kodumanal: Textile industry

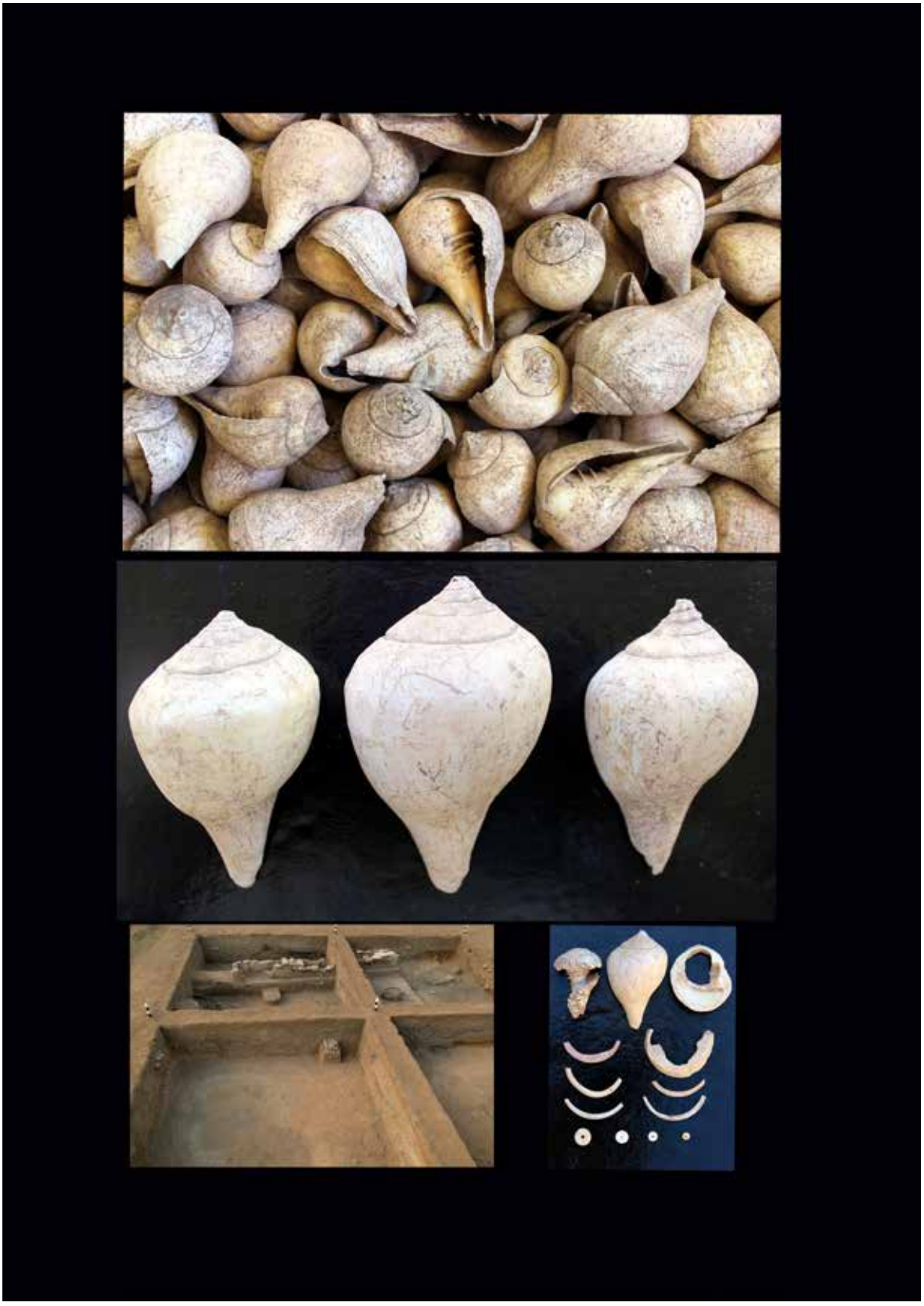


Fig. 2.63. Kodumanal: Shell industry

Graffiti

The habitation part of the site yielded 2632 graffiti-bearing potsherds. Most of them were recovered from the earlier and middle levels. Half of the graffiti that could be recognized consists of various signs and geometric patterns, and the other half consists of clearly recognisable Tamiḻi letters. There are about fifty almost complete post-firing signs engraved on the shoulder portion of the bowls and pots but mostly confined to the tablewares of the black and red ware. Some signs are found to be compound signs consisting of more than one symbol. A few of these occur repeatedly from different localities and levels. The more common graffiti marks are sun, *swastika*-like, star, ladder, *nandipada*, fish, bow and arrow, wheel, cart, etc. A few graffiti marks were found engraved at the end portion of the Tamiḻi inscription incised on the potsherd. Though the exact connotation of these symbols, individually or in compound form, cannot be easily guessed from the close observation of these symbols, their places of occurrence, frequency and position clearly demonstrate that they were used to convey a certain message either pictographically or ideographically. The graffiti marks encountered in graves are restricted to a limited number. Further, identical marks were observed in different graves thereby suggesting some kind of relationship between these graves. The structure, type of grave goods and the nature of rituals performed in these graves are almost identical, thereby indicating close social groups, probably a clan.

Tamiḻi (Tamil-Brahmi)

Tamil Nadu met with 1616 Tamiḻi (Tamil-Brahmi) inscribed potsherds from 50 archaeological sites, of which 1109 Tamiḻi inscribed potsherds came from Kodumanal, constituting 68.6% of the total inscribed potsherds coming from Tamil Nadu. If one takes the entire India, the Prakrit-Brahmi inscribed potsherd constitutes merely 1%. Hundreds of personal names such as *kaṇṇaṉ* āta*ṉ*, *varuṇi,* āta*ṉ, visā*k*anan, campaṉ sumanaṉ* (Fig. 2.64)*, paṇṇaṉ, antuvaṉ* āta*ṉ, sātantaiantavaṉ, tissaṉ, periyaṉ cāttaṉ, atintai, capā makatai pammāta, campaṉ, silikaṉ, sumanaṉ, ūraṇaṉ, ēravataṉ, utiraṉ, muti-kuyiraṉ, atiraiyaṉ, koṟṟaṉ, patavaṉ, tavaṉ-cāttaṉ, nākaṉ, etc.* were identified. The highest number of inscribed potsherds and their wide spread clearly suggest that the literacy rate in Tamil Nadu was so high and the ancient Tamils were aware of the script in the 6th century BCE itself.

Tamilized Prakrit words, silver punch-marked coins, rouletted ware and Northern Black Polished ware, beads of carnelian, agate and lapis lazuli, and copper objects demonstrate their trade contacts with the countries beyond the borders of Tamil Nadu.

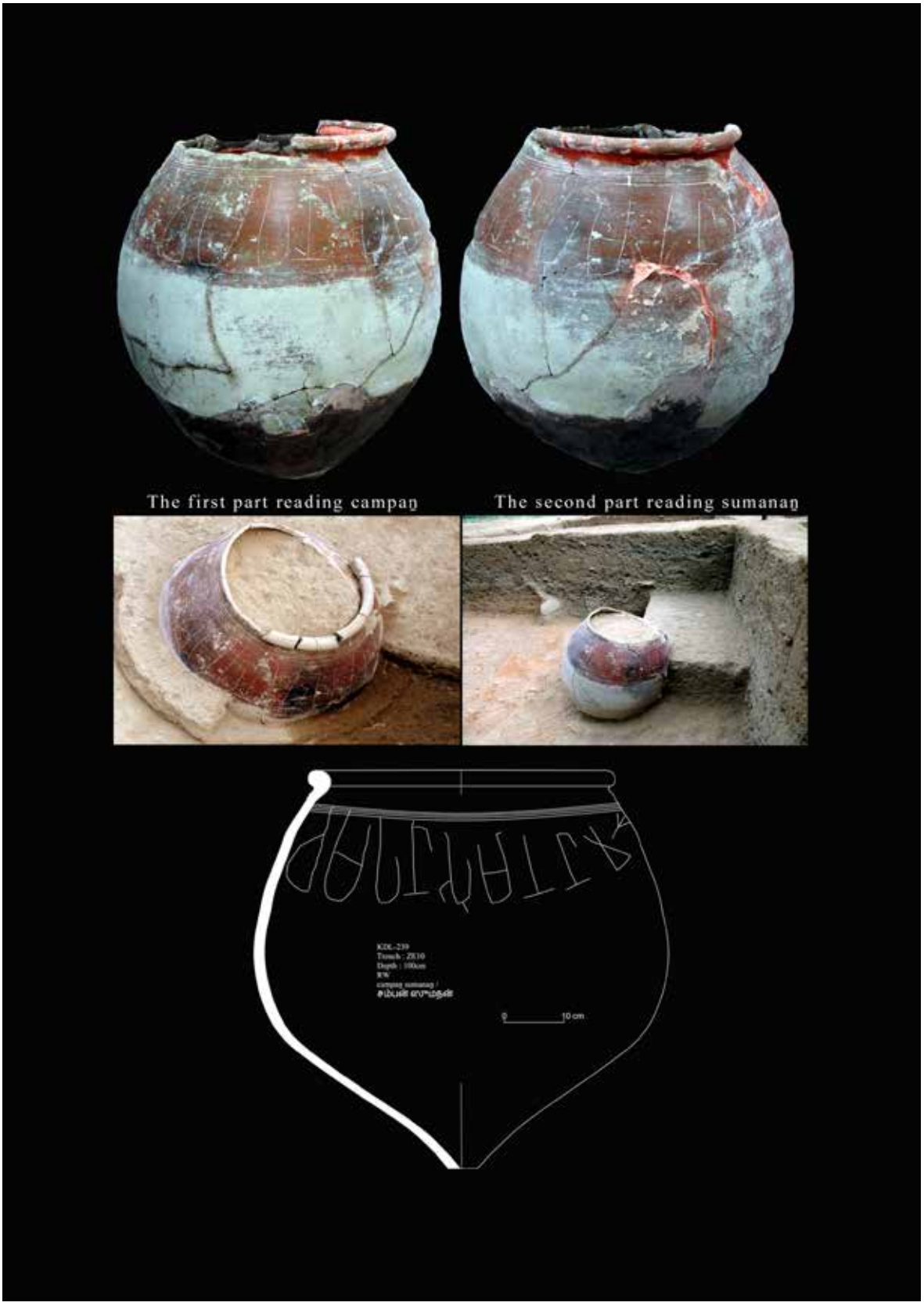


Fig. 2.64. Kodumanal: Tamil̲i inscribed pot

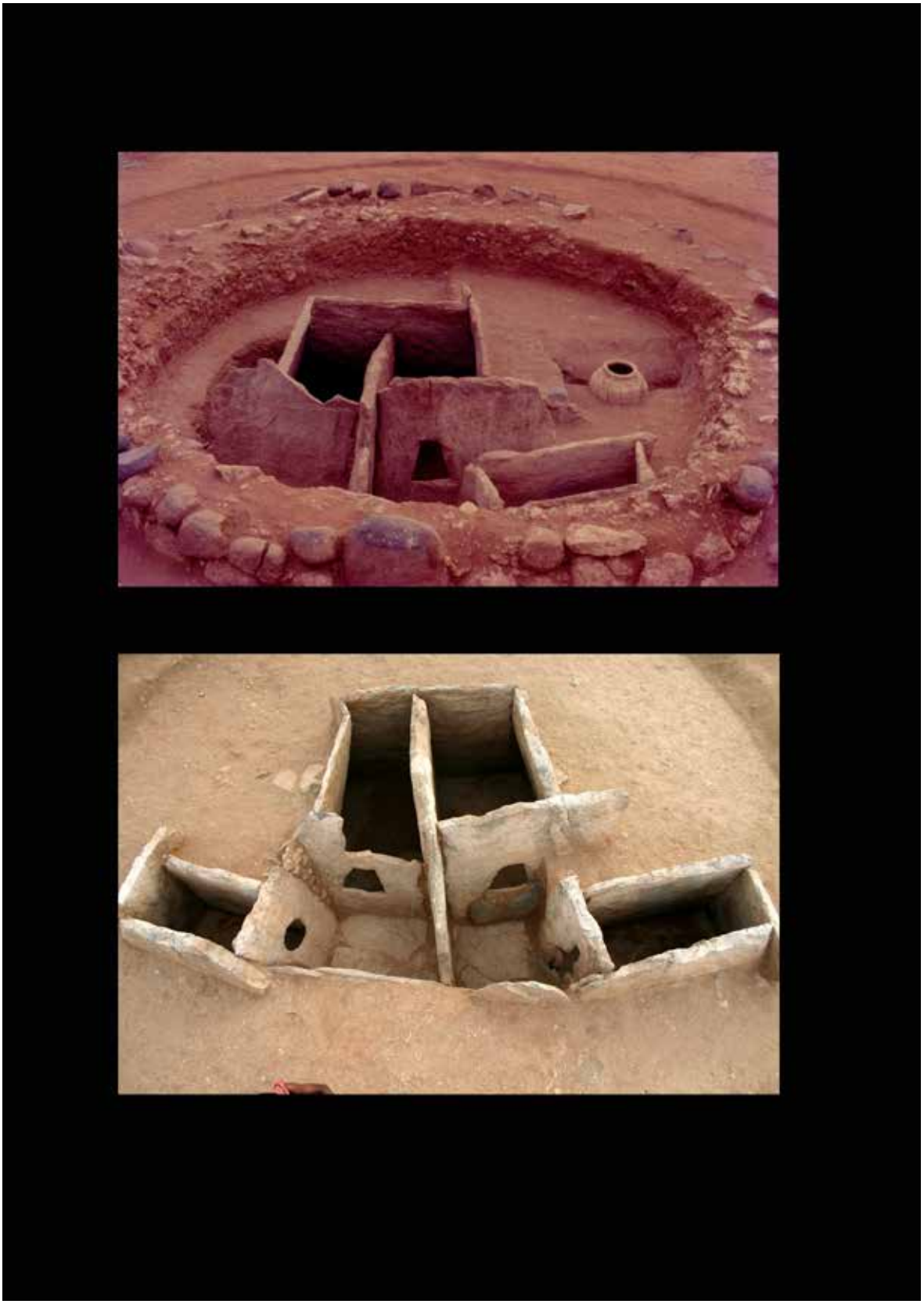


Fig. 2.65. Kodumanal: Excavated graves

Burial Complex

The burial complex consists of more than two hundred fifty burials scattered over an area of 100 acres on the east and northeast sides of the habitation. Two types of cairn circles, consisting of either a single or double circle, were documented. In the first type, the outer circle is made of vertical slabs planted at regular intervals, and the inner circle is made of boulders. In the second type, while the outer circle is similar to the above, the inner circle is made of triangular flat stones placed in five to eight courses to form a perfect circle (Fig. 2.65). Generally, the vertical slabs of the outer circle are planted 30-50 cm below the ground level and raised 50- 100 cm above it. In a few cases, these vertical slabs were more than 5 m in height, thereby resembling a menhir (Fig. 2.66).

The majority of the graves are cairn circles entombing cist burials. All the cairn circles invariably had a cist. The graves opened to date provided four types of cists such as simple cist with a passage on the east, double cists, transepted cist and transepted cist with subsidiary cists. The cists were all oriented in an east-west direction with a passage on the east. The trapeze-shaped porthole is noticed in all three types. A keyhole-type posthole is observed in the subsidiary cists. Interestingly, the base slab of the cist was partially broken on the northwestern side. The cists were covered by individual capstones. Some buttresses made of boulders are erected at regular intervals around the cist in the gap between the orthostats and the pit wall.

Grave Goods

Grave goods were placed inside the cist in the passage and all around the cist in the gap between the cist and the inner circle of the burial. The grave goods are found against the porthole, both in the passage and the cist, and on the floor slab of the cist. In the case of multiple cists, one sword is invariably placed against the porthole in the passage. Chronologically, the offerings were made inside the cist in earlier megaliths and in later ones, they were performed outside the cist. Almost all the grave goods, especially pottery, iron objects and beads, were made specially for the occasion. Invariably, all the burials yielded etched carnelian beads and a few beads of banded agate, varying from a few to thousands. More than 2000 carnelian beads were collected from a single burial. The main production of the site is the quartz beads. Interestingly, quartz beads did not find their place in graves. This preference indicates that the locally made objects did not receive much importance, whereas imported ones attracted the attention of the society, probably expressing their economic or social status.

Fig. 2.66. Kodumanal: Excavated graves

Fig. 2.67. Kodumanal: Gold objects

Artefacts

In addition to the carnelian beads, copper objects like a tiger figurine inlaid with alternating triangular pieces of carnelian and sapphire, spoons, bowls, a strainer, bangles, etc., were found. Silver spiral bangles and rings were collected from two burials. These rings were also found interlaced with plain, barrel-shaped carnelian beads to form a necklace. Beads, rings and spiral rings made of gold were also recovered (Fig.2.67). One gold ring was made of copper wire concealed with gold foil.

Iron objects were collected, which were placed as an offering in the cist, passage and outside the cist. The majority of iron objects were long and short swords, arrow heads of tanged and barbed variety, leaf-shaped arrow heads, bows, etc. Quite interestingly, horse bits and stirrups were also collected. One unidentified object may be a horse ornament, but a similar piece has been called a battle axe in earlier archaeological records, which was also collected. It seems to be a convention to put a sword in front of the passage. A bunch of arrow heads were placed inside the subsidiary cist against the porthole. A few worn-out russet-coated ware found in graves must have been brought from the habitation, thereby suggesting their close relationship. Each burial had distinct graffiti marks engraved invariably on all its pottery. The black-and-red ware is restricted to bowls, plates and miniature pots whereas lids and ring stands are made of black polished ware. Storage jars and big pots are made of red ware. The four-legged jars are restricted to red slipped ware.

Disposal of the Dead

The site yielded two different modes of burials. The first type yielded disarticulate secondary burial placed on the base slab of the cist, whereas the second type is of articulated pit burials found in the habitation near the floor levels. For instance, an adult male was buried in the *padmasana* posture. He was wearing a copper ring on his right finger. Veena Mushrif and S.R.Walimbe made an extensive study on the entire human skeletal remains, which was published as a monograph (Veena Mushrif, *et.al.* 2011). The secondary nature of the burial suggests that the body was exposed/buried somewhere else in the first instance, and later on, they were collected and buried ceremonially in the chamber. There are no signs of carnivore, vulture or fish activity on the bones. The de-fleshing also might not have taken place as there are no marks or chipping on the bones. It clearly hints that the body was exposed to nature but not to the creatures.

Chronology

In total, 37 AMS dates (PU-5 and ASI-32) were obtained, of which 17 were from Beta Analytic (PU-5 and ASI-12) and 20 from IUAC. Of the 37 samples, 10 were contaminated, and 27 (PU-5 and ASI 22) were taken into account. The conventional date falls between 408 BCE and 200 BCE, and the calibrated date falls between 480 BCE and 210 BCE. A sample collected in the year 2017-18 from the trench ZE8 at a depth of 75 cm by the ASI was sent to both Beta Analytic and IUAC. Both laboratories provided almost identical conventional dates of 2210±30 BP and 2247±27 BP. The mid-range value falls between 297-271 BCE, though the actual earliest date goes back to 398 BCE and 393 BCE, respectively. There remains a 105 cm cultural deposit below this dated layer. One sample collected from MEG-19 goes back to 978 BCE (2718±30 BP), and the mid-range value of the calibrated date is 863 BCE. The 27 AMS uncalibrated radiometric dates supported with cultural material like Punch-Marked coins, Northern Black Polished ware, rouletted ware, palaeography and orthography of Tamil̲i inscribed potsherds, graffiti marks, the 185 cm cultural deposit with seven-floor levels clearly place the Kodumanal findings between the 6th BCE and 2nd BCE (Rajan and Yathees Kumar 2007:39-45; 2013:279-295; Rajan *et.al.,* 2007a:118-121). The large number of inscribed potsherds recovered from the lowermost level of the cultural deposit at Kodumanal clearly suggests that the habitation and the associated graves belonged to the Early Historic times, and the people were actively involved in trade and industrial activities.

7. Korkai

Kor̲kai (Lat. 8°38’20” N and Long. 78°03’34” E), the celebrated port city of Sangam Age Pandyas, is presently a small village located 1.8 km north of the river Porunai (Tamiraparani) and 5 km northwest of Attur in Eral taluk of Thoothukudi district. It could be approached from Attur, which lies on the Thuthukudi-Tiruchendur National Highway at a distance of 23 km south of Thuthukudi. It is presumed that the word Kor̲kai is derived from the combination of two words *kor̲r̲avan̲+irukkai* or *kor̲r̲ram+kai,* all meaning residential place of the king. However, Caldwell presumes that it is derived from *kol+kai,* an army camp (Caldwell 1877:80-81; 1982:282-285). It lies 3 km southeast of the well-known microlithic yielding *tēri* site Sawyarpuram. The famous urn burial site Adichanallur and the recently excavated habitation-cum-urn burial site Sivagalai, respectively, lie on the right and left banks of the river Porunai, about 10 km and 15 km west of Kor̲kai.

The Porunai (Tamiraparani) deltaic region covers an area of about 9 km in a north-south direction and 6.5 km in an east-west direction. It is characterized by numerous channels

and islets. The offshore area is dotted with shallows extending up to 5.5 km into the sea. Presently, there are three inlets in the delta system. The northern inlets have flat shallow zones resulting in an intertidal zone of about 3.5 km along the coast and a width of 1 km. On the seaside, isobaths of 5 m and 10 m show a marked inclination towards the deltaic system. These indicate the influence of deltaic systems or underline geological structures. Based on the geomorphological evolution, it may be summarized that the present-day Korkai could have survived by the river channels leading to the sea with sufficient depth for the viable navigation suitable for the boats of Early Historic times. Due to gradual sedimentation in the channels, the navigable portions might have been closed for Korkai, leading to the emergence of Palayakayal as an alternate port during medieval times, located about 5.5 km to the northeast along the riverbank. Further geomorphological evolution might have forced the closure of Palayakayal in the course of time and established Punnakayal as a viable port which is about 4.5 km to the southeast. Further changes in the shoreline and the deltaic system seem to have cloaked the northern inlets for navigational purposes. A nearby inlet ,3.5 km south of the main delta, seems to have replaced the northern inlets, paving the way for establishing Kayalpattinam.

Literary references

The Sangam literature provides a vivid picture of contemporary society and the nature of settlement patterns. It refers to Korkai as *Korkai-muṉturai* (anchorage/lighterage at confluence), *Korkai-peruntuṟai* (marketplace/main port for trade) and *Korkaiyam-pērūr* (major town). It is also referred to as the celebrated port of Pandyas (*Pukaḻmali-ciṟappiṟ-korkai-muṉturai* - *Akanāṉūṟu* 201:4), port of Pandya ruler Vaḻuti, the one owns a beautiful chariot (*naṟṟēr-vaḻuti-korkai-muṉturai* - *Akanāṉūṟu* 130:11), the capital of Verrivēl-ceḻiyaṉ (*Akanāṉūṟu* 201), the lords and ruler of the port (*korkai-kōmāṉ-korkaiyam-peruntuṟai* - *Aiṅguṟunūṟu* 188), the place known for pearl (*muttu-paṭu-parappiṟ-korkai-muṉturai* - *Naṟṟiṇai* 235:6 and *alaṅgu-itaḻ-neital-korkai-muṉturai* - *Aiṅguṟunūṟu* 185:1) in literature. In these references, the estuaries of Korkai port are mostly celebrated as the centre of trade transactions where pearl and conch trade took place at a larger scale.

Three poets, namely Mārōkkattu Nappālattaṉār, Mārōkkattu Kāmakkāṇi Nappasalaiyār and Pullaṅkāṭaṉār, son of Mārōkkattu Muḷḷināṭṭu Nallūr Kāvithiyār, are considered to be natives of the Korkai region. Pullaṅkāṭaṉār is the author of *Kainilai,* one of the poems of *Patiṉeṇkīḻkaṇakku*. The prefix *Mārōkkattu* is interesting. The western part of the Pandya country is known *as Ōka-maṇḍalam,* whereas the eastern part is known as *Mārōkka-maṇḍalam* or *Mārōkkattu-maṇḍalam*. From the time of Vālmīki's *Rāmayāṇa* and Kautilyā's *Arthasāstra*, Korkai is referred to as *Kapāṭapura*, the city known for pearls and conch.

Epigraphical Sources

Though the port Koṟkai became non-operational and the port activities were shifted to Kayalpattinam in the medieval period, the significance of Koṟkai continued. The famous Vēḷvikkuḍi copper plate issued by Pandya Parāntaka Neḍuñceḻiyaṉ refers to the grant made on demand to Koṟkai-k-kiḻāṉ Kāmakkāṇi Naṟsiṅgaṉ (Suvarañsiṅgaṉ), a descendant of Koṟkai-kiḻāṉ-Naṟkorraṉ. The inscriptions issued by Chōḻa kings Rājarāja-I (985-1014 CE), Rājēndra-I (1012-1044 CE) Vīrarājēndra (1063-1070 CE) and Kulōttuṅga-I (1070-1120 CE) and Pāṇḍya kings Sri Vallabha (1090-1120 CE), Saḍaiyavarmaṉ Kulasēkhara (1190-1220 CE), Māṟavarmaṉ Sundara Pāṇḍya a-I (1216-1238 CE), Saḍaiyavarmaṉ Vīra Pāṇḍya (1253-1274 CE), Māṟavarmaṉ Kulasēkhara-I (1268-1318 CE), Māṟavarmaṉ Vikrama Pāṇḍya, Kōṉērinmaikoṇḍāṉ and others noticed Īsvaramuḍaiyār temple at Akkasālai, Naṅgaikōil at Koṟkai, ChandrasēkharaĪsvarar temple at Maramangalam and Sōmanāthaswāmi temple at Attur clearly emphasis on the political and endowment activities of the contemporary times (*ARE* 157, 157c, 161-165/1903; 386-479/1929-30). As per the inscriptions, Koṟkai *alias* Madurāntaka-nallūr falls in the territorial division of Kuṭa-nāḍu, a part of Rājārāja-pāṇḍināḍu *alias* Rājēndrachōḻa-vaḷanāḍu during the time of Chōḻa rule. The territorial division was renamed as Pāṇḍiyanāḍu *alias* Kuṭanāḍu, and Koṟkai was renamed as Koṟkai *alias* Madurōdaya-nallūr. In the early part of the Christian era, the bay was called as Koṟkai bay (*Koṟkai-vaḷaikuṭā* meaning Koṟkai bay) in foreign accounts and later on *kuṭā* has become *kuṭa* in the medieval period (*SII* III:461, 462, 466). As per the Tiruchchendur inscription of Pandya king Varaguṇa-II (862-885 CE), the Ūr assembly and Mahāsabhā of Koṟkai village agreed to meet the yearly expenses incurred towards temple rituals of the Thiruchchandur temple out of accrued interest on the capital received from the said temple (*SII* XIV:16A).

The Chinese traveller Zhao Rukuo (Chaujukua -1225 CE), the author of *Chufanchi* (Zhū Fān Zhi) (Hirth and Rockhill 911:87-92; Shao-Yun Yang, 2021) and Marco Polo (1270-1300 CE) refer to the continuation of pearl fishing in the Gulf of Koṟkai (Nilakanta Sastri 1939: 179). Friar Jordanus (1330 CE) recorded that nearly 8000 boats were deployed in a month for pearl fishing (Friar Jordanus 1893:28).

The sedimentation or siltation accumulated in the deltaic region of Porunai (Tamiraparani) due to continuous flow led to the formation of a new landscape, leading to the disuse of existing ports and the emergence of new ports such as Palayakayal, Punnakayal and Kayapattinam. The meaning of the term *kāyal* stands for an interior water body connected with the sea through a channel. It looks like a lagoon/backwater. The term *kāyal* attached to these ports as a prefix/suffix suggests that these are the ports that emerged after the downfall of Koṟkai. These three ports are chronologically moved from north to south, suggesting the

southerly migration of the river Porunai. Thus, the geomorphological data synchronise well with the epigraphical and foreign accounts.

Identification of Kor̲kai

Caldwell is the first one who identified Kor̲kai with Kolkoi (Κόλχοι) of the Greeks in the Gulf of Mannar. The Gulf of Mannar is known as the Colkhic Gulf (*Kor̲kai-kuṭā* in Tamil) to the Greeks (Caldwell 1877:80-82; 1982:283). The *Periplus Maris Erythraei, Sea of the first century CE* and Ptolemy's *Geography* of the second century CE called Kor̲kai as *Kolkhoi Emporium*. The maps of the Peutinger Tables also identify the site as *Colcis Indorum* on the east coast in the Gulf of Mannar. This gulf is known to them as the Colchi gulf (*Kor̲kai-kuṭā* in Tamil). Ptolemy places the port immediately north of the river Solen, and it was the first port encountered by the Greeks after crossing Cape Comorin (*Komaria Akron* of Ptolemy; *Komarei* of *Periplus*; in Tamil Kaṉyākumari). All the foreign accounts referred to it as the port city of Pandyas, and it is known for pearl fishery (Schoff 1974:209-211; 237-239).

The place names found around Kor̲kai vouch for the historicity of the site. A tank called Pa̲laya-thu̲raimukam, meaning old port (pa̲laya>old; thu̲raimukam> port), lies on the northern side of the village Kor̲kai. On the northern bank of the tank lies the village Akkasālai, the place of coin mint and on the southern bank lies the Akkasālai-piḷḷaiyār (Gaṇēsha of Akkasālai). In fact, the temple was dedicated to Siva, whereas the local people designated it as Piḷḷaiyār temple. The inscriptions referred to this place as *Rājarāja-pāṇḍināṭṭu-uttamachō̲la-vaḷanāṭṭu-kuṭanāṭṭu-k-kor̲kaiyā̲ṉa-madurāntaka-nallūr* and *kuṭanāṭṭu-k-kor̲kaiyā̲ṉa-madurōdaya-nallūr* (*SII* III:466, 462). The villages Maramangalam and Mukkāṇi (ancient Koḍuṅkaṇṇi?) respectively lie north and east of Akkasālai. The village Iḍaiyar-kāḍu, meaning shepherd's pastoral land, lies north of Maramangalam. This village is mentioned as Kōvalar-irukkai (shepherd's pastoral land) in the post-Sangam Age Epic *Maṇimēkalai* (*Maṉimēkalai* 13:84). The village Kor̲kai-Maṇalūr lies south of Kor̲kai, and Umarikkāḍu lies further one km south of Maṇalūr.

The three medieval ports Pa̲layakāyal, Pu̲nnakāyal and Kāyalpaṭṭinam identified with Cael Velho, Punicale and Calepatanão of Marco Polo (Jorge Manuel Flores, 1995:9-26) are located east of Kor̲kai, a halfway between the seacoast and Kor̲kai. Palayakayal lies in the north, Punnakayal in the middle and Kayapattinam in the south. The shift of the port from north to south suggests that the river Porunai (Tamiraparani) is tending to migrate towards the south. The shift from Kor̲kai to Kāyal in the easterly direction also indicates that due to the sedimentation or siltation of the river mouth, the Early Historic port Kor̲kai became non-operational, and the medieval port Kāyal became operational.

Pearl and Chank Fishing

The major economic activities of the Koṟkai are the pearl and chank trade. The vibrant chank and pearl trade brought considerable wealth to the Pandya country. The Sangam literature *Maduraikāñchi* refers to a settlement called Iruñchēri involved in pearl and chank fishing (*Maduraikāñchi* 138-133). Koṟkai port is described as one of the pleasant ports in *Akanāṉūṟu* due to the numerous screw-pine bushes encountered on the seashore. The fragrance of the screw-pine flower spreads in the air and dominates the odour of fish and algae and this smell kept that port very pleasant (*Akanāṉūṟu* 296:10). The reference to the nature of the pearl, collection of pearls and trade value is vividly described in the literature (*Naṟṟiṇai* 23:6). The pearls and oysters lie in heaps in the estuaries. The women worship on the full moon day with pearl (*Akanāṉūṟu* 201:5-7). The community involved in pearl fishing were called as Parathavar (*Akanāṉūṟu* 350:11-15). In the same way, the community involved in salt production are called as Umaṇar (*Akanāṉūṟu* 295:9; *Naṟṟiṇai* 374:2). The transoceanic trade activities and pearl and chank fishing were carried out in specialized boats and were invariably called as *kaṭṭumaram, tōṇi, paṭaku, paricil, kalam* and *nāvāi.* The last two mentioned boats were considered sea-going vessels.

Previous Investigations

The initial spade work was carried out by scholars such as J.T.Kearns, R.Caldwell, F.Jagor, Louis Lapique, L.A.Cammiade, Alexander Rea and C.R.Krishnamacharlu in pre-Independence India. The archaeological importance of this region was brought to light by the discovery of Adichanallur in the year 1876 by F. Jagor of Berlin. Louis Lapique of Paris excavated this site in 1903-04, and later by Alexander Rea in 1905. Thus, the contributions of Caldwell to Koṟkai and Rea to Adichanallur are well-known. However, the archaeological investigations in the post-Independence era are quite negligible. Senthil Selvakumaran and Chandravanan of Tamil Nadu State Department of Archaeology, and M.Prasanna, Research Scholar of Pondicherry University, brought to light a limited number of sites in this river valley, particularly in Amabasamudram and Tenkasi taluks. Finally, the Archaeological Survey of India (ASI) under the direction of T.Satyamurthy excavated Adichanallur in 2004 (Satyamurthy 2007:55-66; Nambirajan 2009:57-61). The wealth of artefacts led to the declaration of Adichanallur as one of the iconic sites of India, and the excavation is in progress under the direction of Arunraj of ASI. Besides, there are some sporadic digs in the sites such as Kāyal (Caldwell 1887:80-83), Kilnattam (Rea 1902-03:23-24), Tiruthu (Marshall 1902-03:77) and Kalugumalai. Except at Koṟkai, all other excavations were concentrated on urn burials. The Tamil Nadu State Department of Archaeology excavated habitation-cum-burial sites at Adichanallur and Sivagaḷai respectively in the years 2021 and 2022 (Sivanatham, *et.al.,* 2022).

Most of the explored sites of this valley are burial complexes, though there are a good number of habitation mounds (Fig. 2.68). To date, more than fifty sites have been documented in the valley. The Adichanallur burial complex could be taken as a representative or index site of the valley. The celebrated Pandya port Kor̲kai, excavated by the State Archaeology Department, located on the mouth of the river, could be taken as an index site for habitation (Caldwell 1887:80-83; Krishnamacharlu 1936-37:67-75; Abdul Majeed 1987 74-77; Sivanantham *et.al.*, 2022).

It was Rev. Bishop Robert Caldwell, who identified the present village with ancient Kor̲kai and drew the attention of scholars to its importance to South Indian history. He conducted excavations at Kor̲kai in 1876 and published the findings in the *Indian Antiquary* in March 1877. He excavated several urn burials with skeletal remains (Caldwell 1877:80-82). He also reported two Jain *Tīrthaṅgaras* as Buddha statues. Subsequently, several scholars, such as Maloni and Loventhal, visited the site. In 1888, Loventhal collected Roman coins of Augustus and Nero (Loventhal 1888) signifying its Roman contacts.

In 2014, R.Krishnamurthy brought to light two square Pandya copper coins with Tamil̲-Brāhmī (Damil̲i) script reading of *Ceḻiya* and *Ceḻiyaṉ* on the obverse and an elephant depicted on the reverse (Krishnamurthy 2014). Several copper coins were collected by the local residents, particularly by Narayanapillai. Among them, a few were Sangam Age coins, and the remaining were medieval Pandya coins. Sangam Age square copper coins are inscribed with Pandya king names such as Ceḻiyaṉ and Vaḻuthi in Damil̲i script datable around the 3rd century BCE. Two Jain Tīrthaṅgara sculptures were lying, one near the bus stand under the Vaṉṉi tree and another in the paddy field. The first one was shifted to the Government Museum for display, and another sculpture disappeared.

Irrespective of its historical significance, it was a long wait for the spade work of the archaeologists. In the year 1968-1969, the Tamil Nadu State Department of Archaeology excavated under the direction of R.Nagasamy to reveal its antiquity (Nagasamy 1970:50-54; Abdul Majeed 1987:73-77). Kor̲kai was chosen for systematic archaeological investigations to expose the continuous human settlement through the ages, right from the microlithic period. The main focus was to expose the wharf remnant at Agaram and collect a good number of coins of the Pandya period from Arasankulam, close to Arumugamangalam, from where a large number of early Pandya coins were recovered earlier. Two urn burials, a brick structure and a ring well were exposed. The excavation yielded eight Damil̲i (Tamil̲-Brāhmī) inscribed potsherds from trenches KRK-4, 5 and 6 in addition to graffiti marks, Northern Black Polished ware and pearl oysters. The trenches KRK-3 and 4 are exposed with the foundation of a rectangular structure constructed using granite stones, bricks and soakage

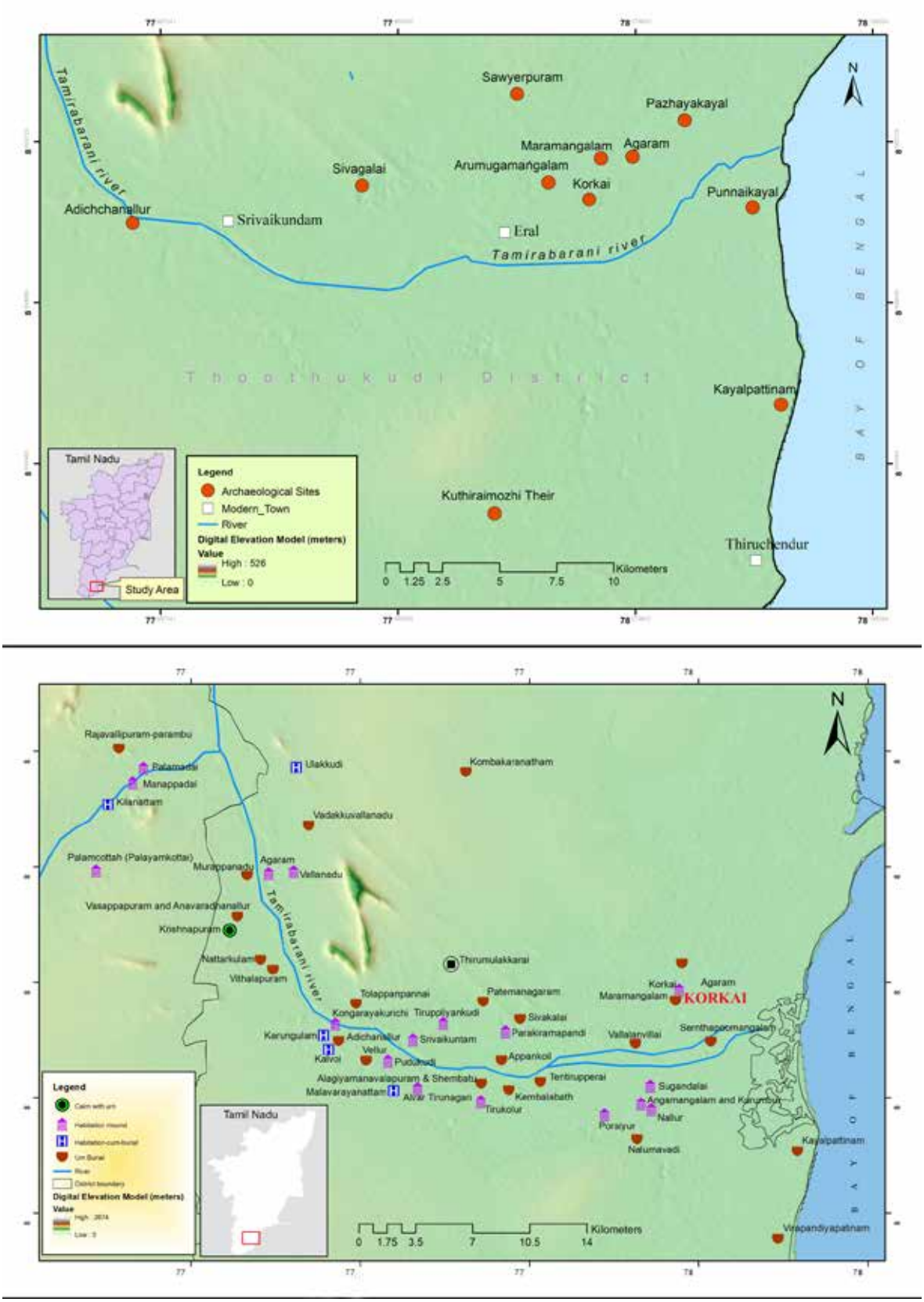


Fig. 2.68. Korkai: Site settings

rings, respectively. Likewise, KRK-5 is also exposed to rows of soakage. Besides, black-and-red ware, black ware, red ware, red slipped ware, shell bangle pieces, graffiti potsherds, carnelian beads and terracotta objects were unearthed. The charcoal collected from the hearth at the lowermost strata at the depth of 2.69 m in the trench KRK-4 yielded an uncalibrated date of 14C 785 BCE (2755±95 BP).

Based on the artefacts, Damili inscribed potsherds, inscriptions and other cultural material, the habitation cuttings were divided into three cultural periods as:

Period I : 3rd century BCE – 4th century CE

Period II : 4th century CE – 10th century CE

Period III : 10th century CE - 14th century CE

The chronological frame was designed irrespective of the availability of NBPW and 14C date (785 BCE), as the prevailing concept/hypothesis prevented the excavator from accepting the 14C date; rather, he confined it to the 4th century BCE as the earliest date. Recently, the Adichanallur and Sivagalai yielded the AMS 14C date of cal. 850 BCE and 1155 BCE respectively (Sivanantham, *et.al.*, 2022:14). Now, the date of NBP ware is also pushed back to the 7th century BCE in the Gangetic valley. Therefore, the rejection of the date of 785 BCE in the 1970s required a re-look based on recent evidence encountered in Tamil Nadu and other parts of India.

Present Excavations

Keeping in view of the rich evidence encountered at Korkai, the Tamil Nadu State Department of Archaeology re-excavated the site in February 2021 (Thangadurai *et.al.,* 2023:79-88). The habitation mounds were identified at Korkai (8°38’20” N and 78°03’34” E), Maramangalam (8°39’22” N and 78°03’40” E), Agaram (8°39’24” N and 78°04’24” E) and Arumugamangalam (8°38’48” N and 78°02’24” E). All the habitation mounds are part of ancient Korkai, and it has been labelled as Korkai and its clusters (Fig. 2.69). In total, 11 trenches measuring 10x10 m were laid in 4 localities and 17 quadrants (A1/I, A1/II, A1/III, A1/IV, B1/I, B1/II, C1/IV, D1/IV, D2/II, D2/IV, E14/II, F12/IV, P2/I, P2/IV, U15/IV, U16/IV and V17/III) were excavated (Fig. 2.70).

In Locality-1, four trenches were laid (A1, B1, C1, D1 and D2). The maximum cultural deposit encountered in this locality is 170 cm, which yielded a terracotta figurine, hopscotches,

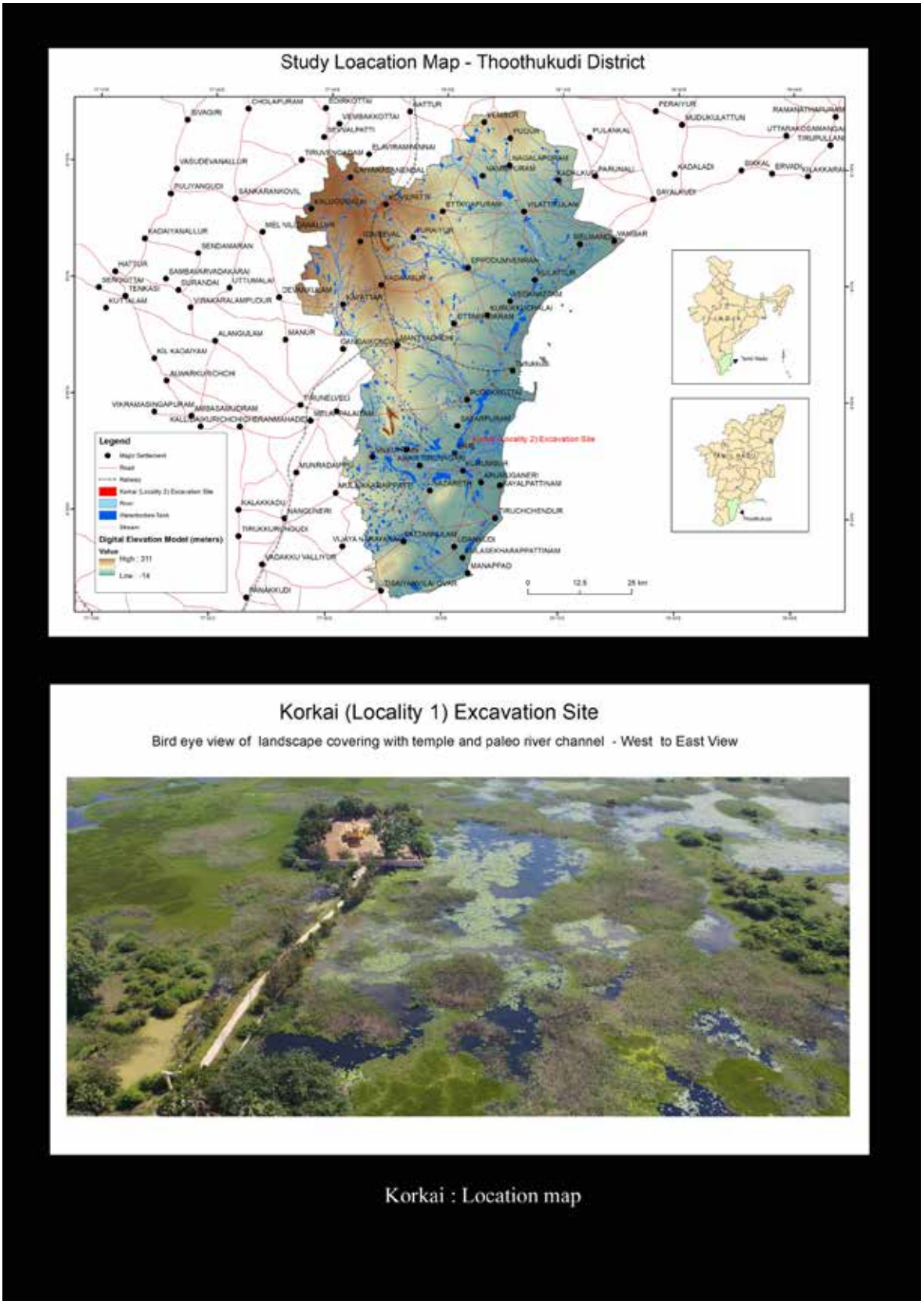

Study Loacation Map - Thoothukudi District
Legend
Digital Elevation Model (meters)
Korkai (Locality 1) Excavation Site
Bird eye view of landscape covering with temple and paleo river channel - West to East View
Korkai : Location map

Fig. 2.69. Korkai: Location of Korkai

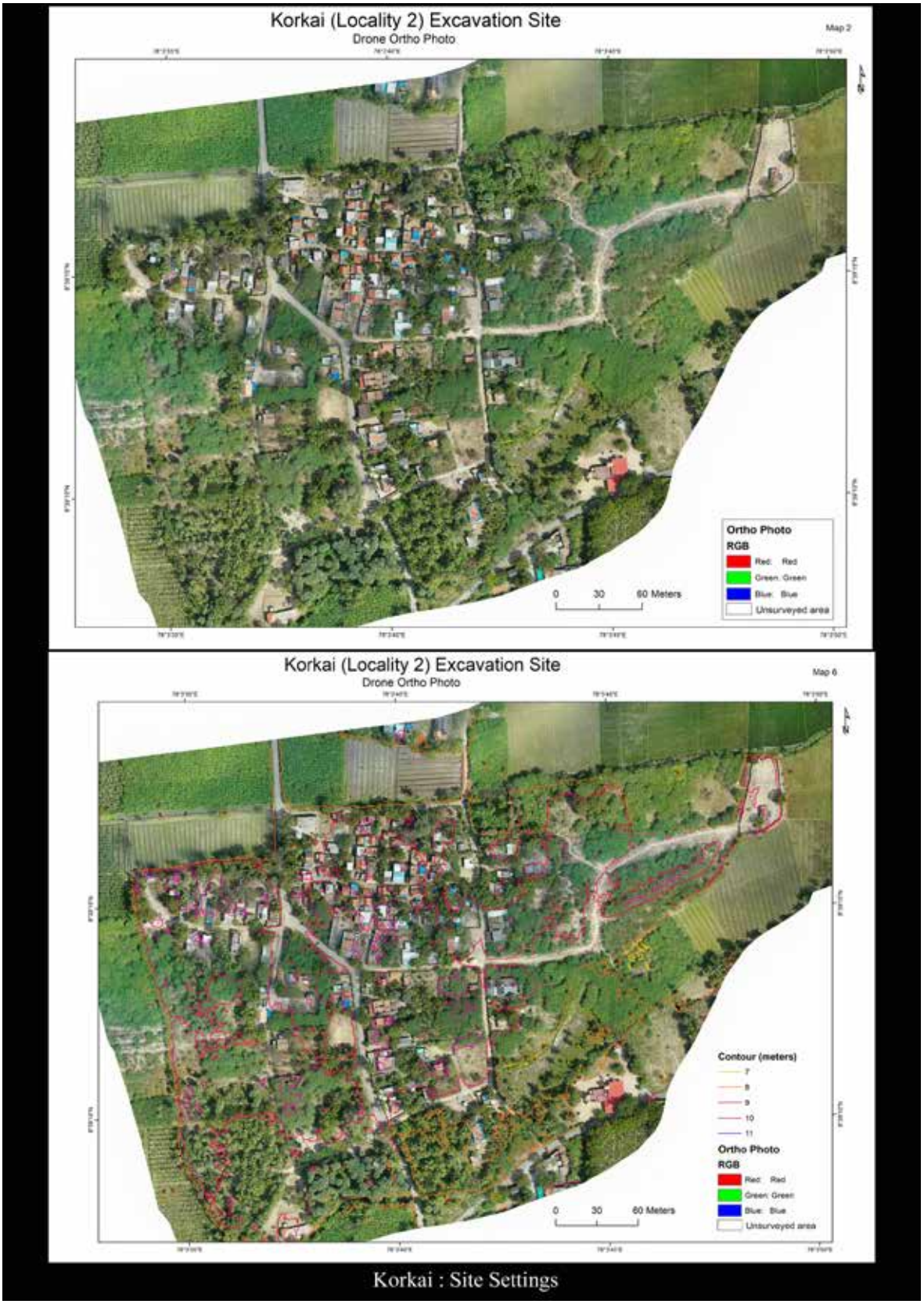


Fig. 2.70. Korkai: Site settings of Locality-2

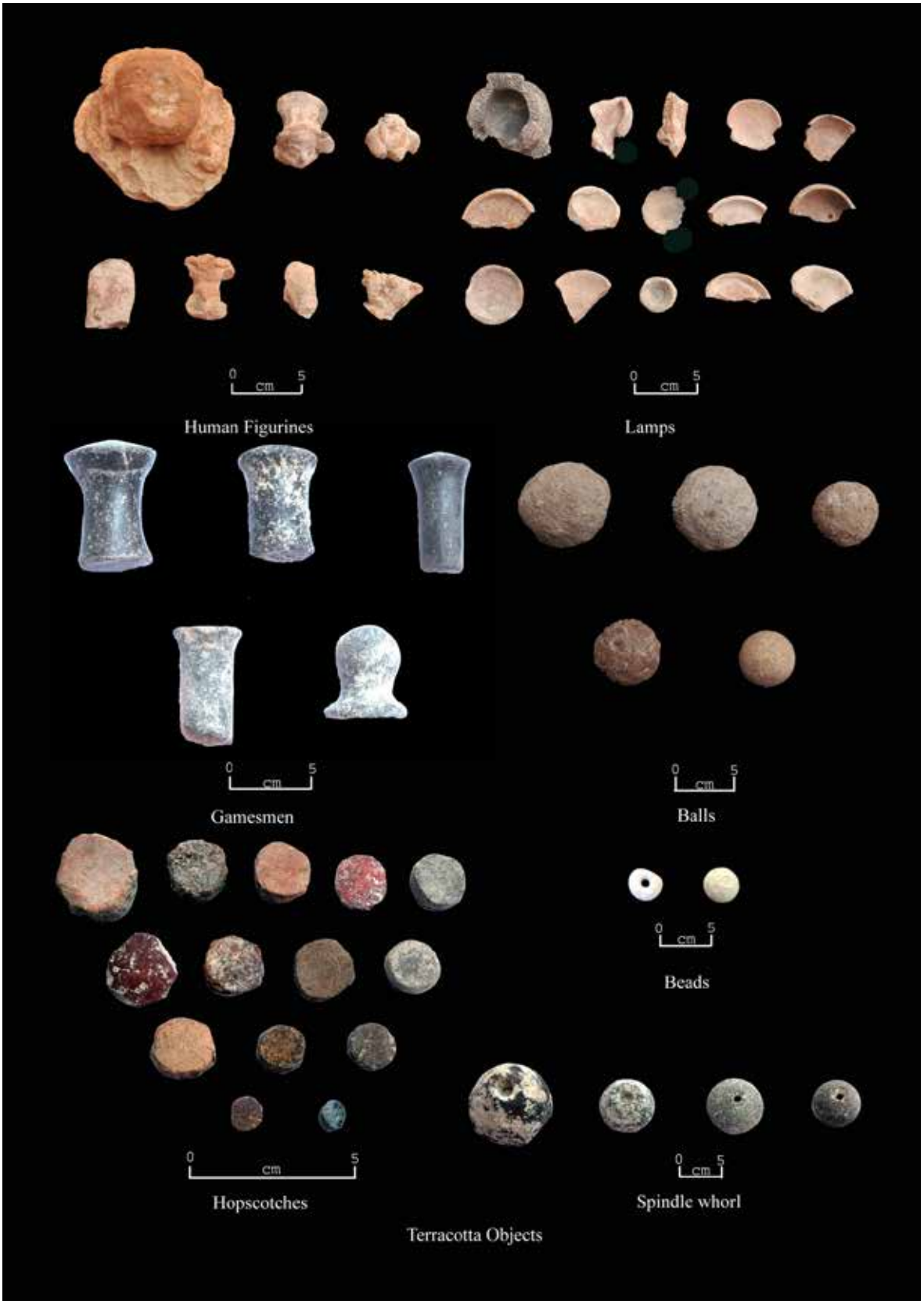


Fig. 2.71. Korkai: Terracotta objects

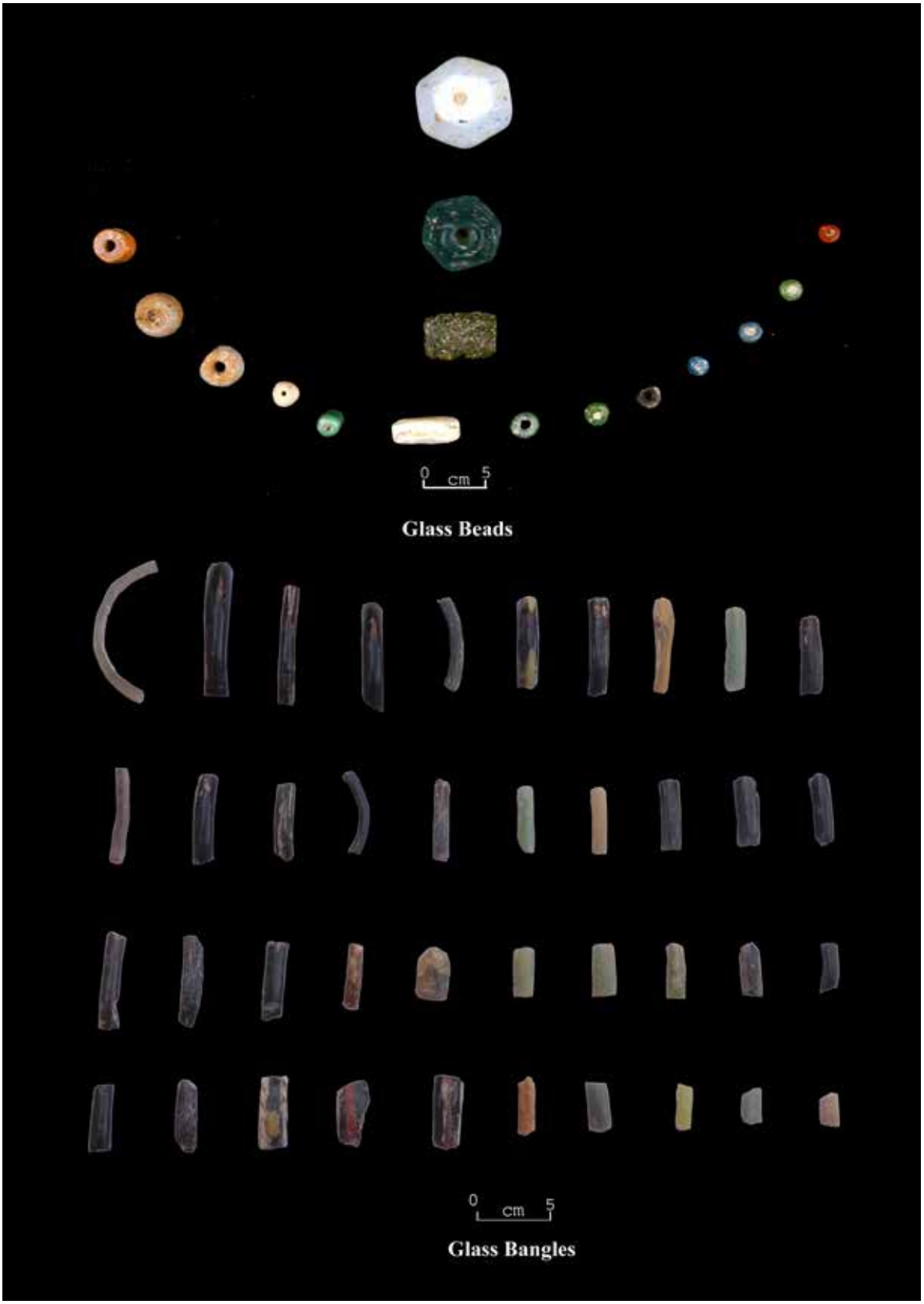


Fig. 2.72. Korkai: Glass beads

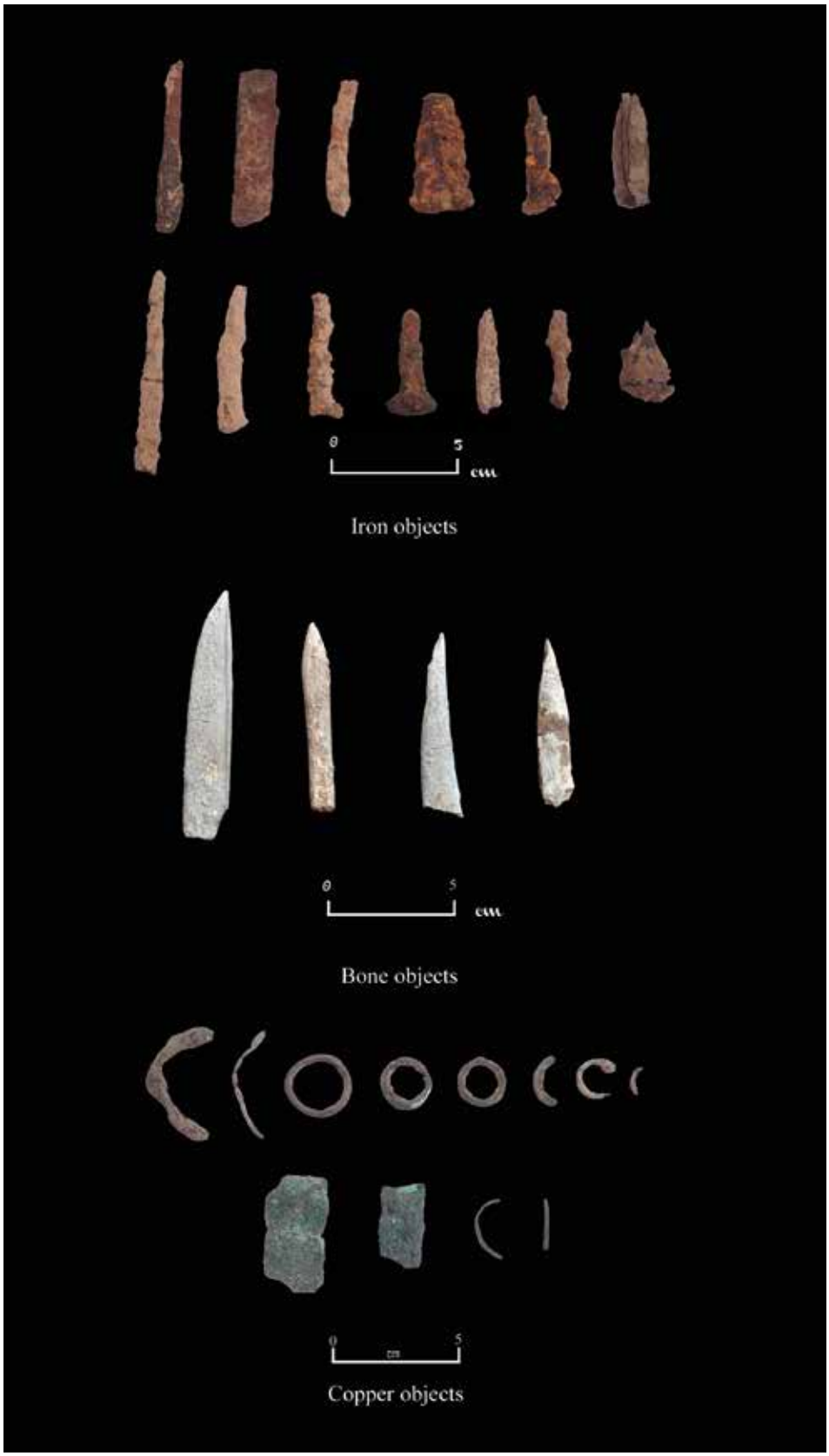


Fig. 2.73. Korkai: Iron, copper and bone objects

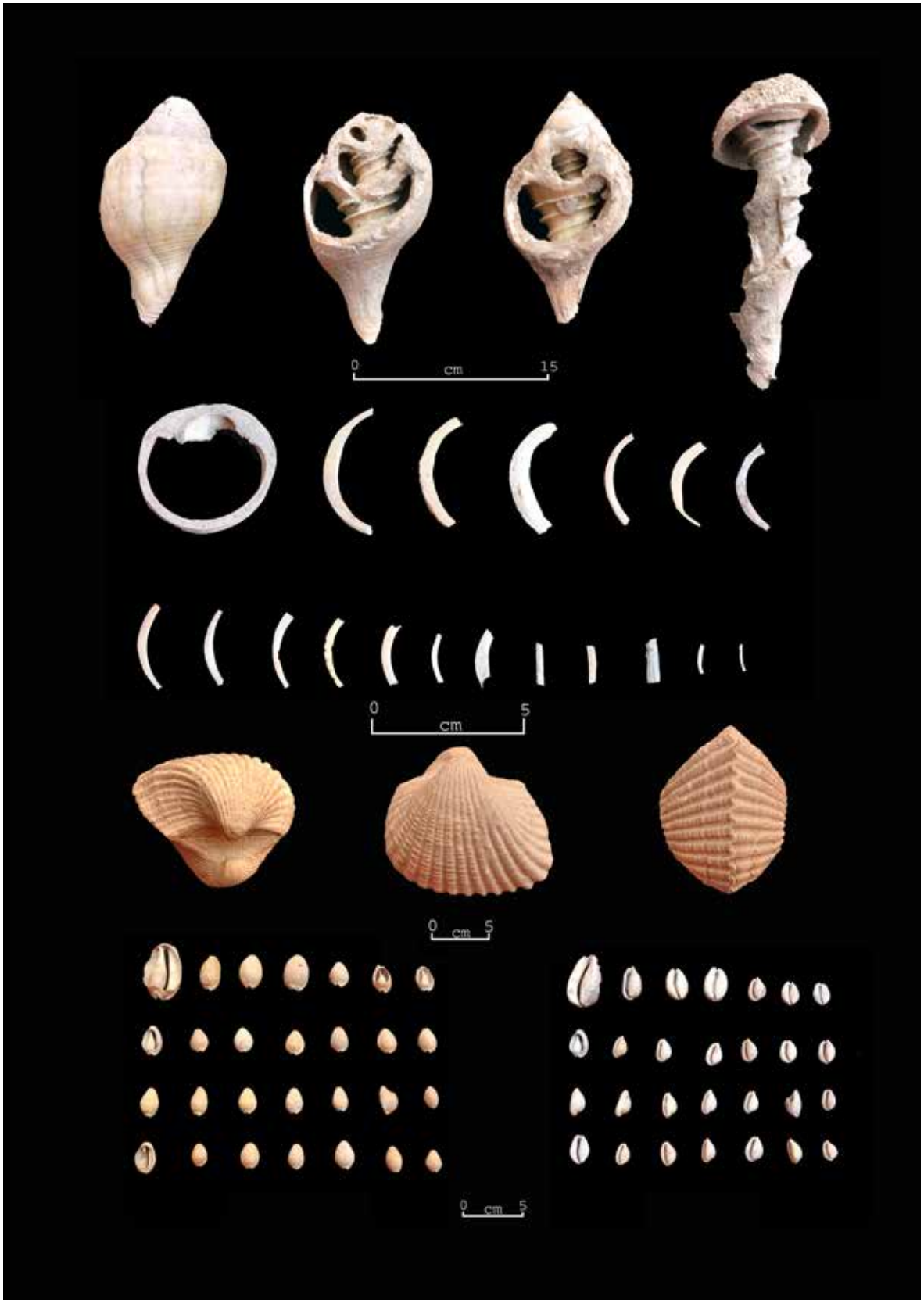


Fig. 2.74. Korkai: Conches and shell objects

shells and conches, rice husk deposit, glass beads, terracotta beads, iron nails, graffiti sherds, perforated ware and storage pot (Figs. 2.71-2.73). The major ceramics are black-and-red ware, black polished ware, red ware and black ware.

In Locality-2, three trenches (U15, U16 and V17) were laid. It had a maximum cultural deposit of 190 cm. It yielded potsherds inscribed with graffiti marks, stone vessels, conches, shell rings and bangles, hopscotches, terracotta smoking pipes, bone points, conch bangles, glass bangles, chowries, iron slag, unidentified iron objects, unidentified copper objects, glass beads, terracotta lamp, grinding stone and copper pieces (Fig. 2.74). On the ceramic front, basins, spouts, plates, bowls and pots of red ware, red slipped ware, black-and-red ware and black ware were unearthed.

In Locality-3, a solitary trench (P2) was laid in available open space within the present settlement. This trench yielded some interesting objects and brick structures (Fig. 2.75). A rectangular-shaped brick structure with 29 courses in a north-south orientation, with a length of 125 cm and breadth of 35 cm, was exposed at a depth of 95 cm (Fig. 2.76). On the western side, one more course of bricks was observed. The structure has a total height of 235 cm. The dimensions of a brick measure 42x21x6 cm. Due to the soil pressure, the brick walls were pushed inward, making the rectangular structure look like a star-shaped structure. At the base, two lines of bricks were laid over which a single line was laid. The sand filling is observed up to the fifth course of the structure from the base. A storage jar measuring 52 cm in diameter kept inside the brick structure is exposed at a depth of 230-240 cm. Whether the brick structure is constructed to protect the storage jar kept inside is yet to be assessed. Nearly 60 complete shells and limestones were placed around the storage jar, signifying some kind of ritual. These shells and limestones also prevented the jar from tilting. Brickbats, Northern Black Polished ware (NBP), tiny bones, graffiti-bearing potsherds and cut shell pieces were collected with charcoal from the storage jar. After the removal of the soil inside the storage jar, it is found that the base of the storage jar is broken and below which another storage jar is observed.

Charred bones and animal teeth were collected at a depth of 132-140 cm. Bones were found around the storage jar. A large number of graffiti marks and Damiḻi (Tamiḻ-Brāhmī) inscribed potsherds were collected (Fig. 2.77). Quite interestingly, seven amphora potsherds were collected at a depth of 200-205 cm. A ramped sandstone feature laid over river sand was noticed around the storage jar at a depth of 302 cm.

In this trench, a large number of graffiti-bearing potsherds, roof tiles, shells, conches and potteries of red ware, black-and-red-ware and black ware potsherds were collected. A few

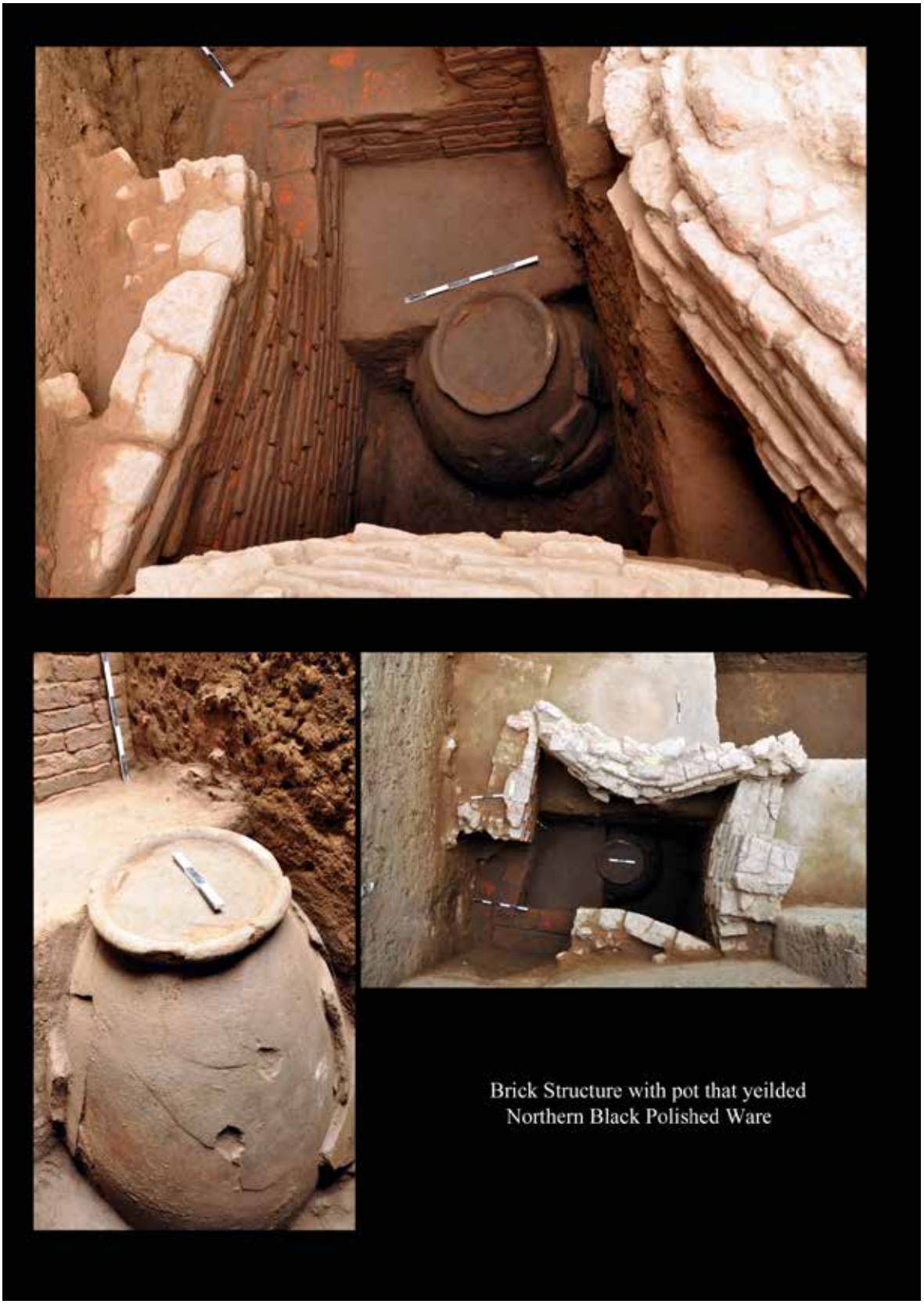


Fig. 2.75. Korkai: Brick structure

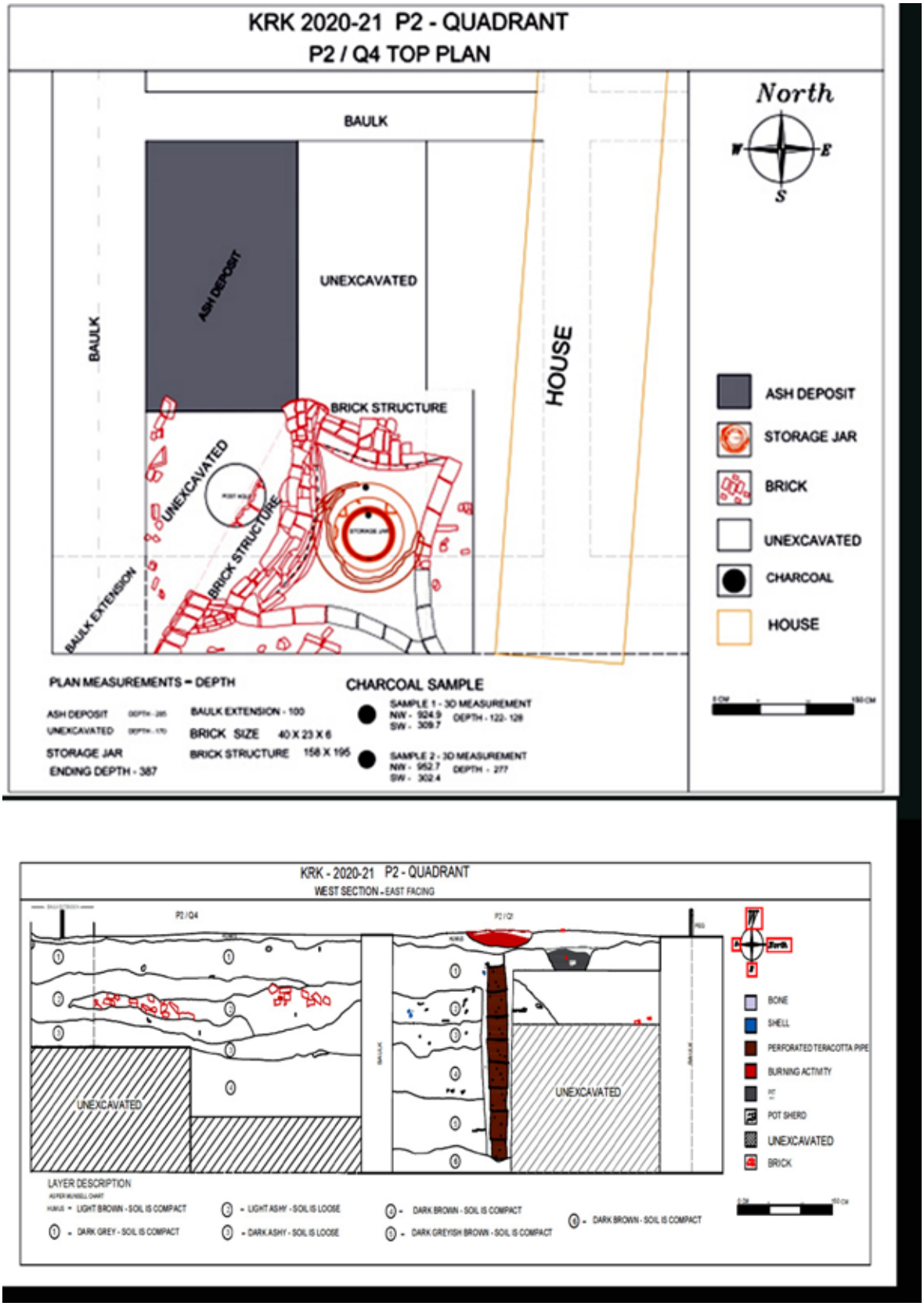


Fig. 2.76. Korkai: Plan of the brick structure

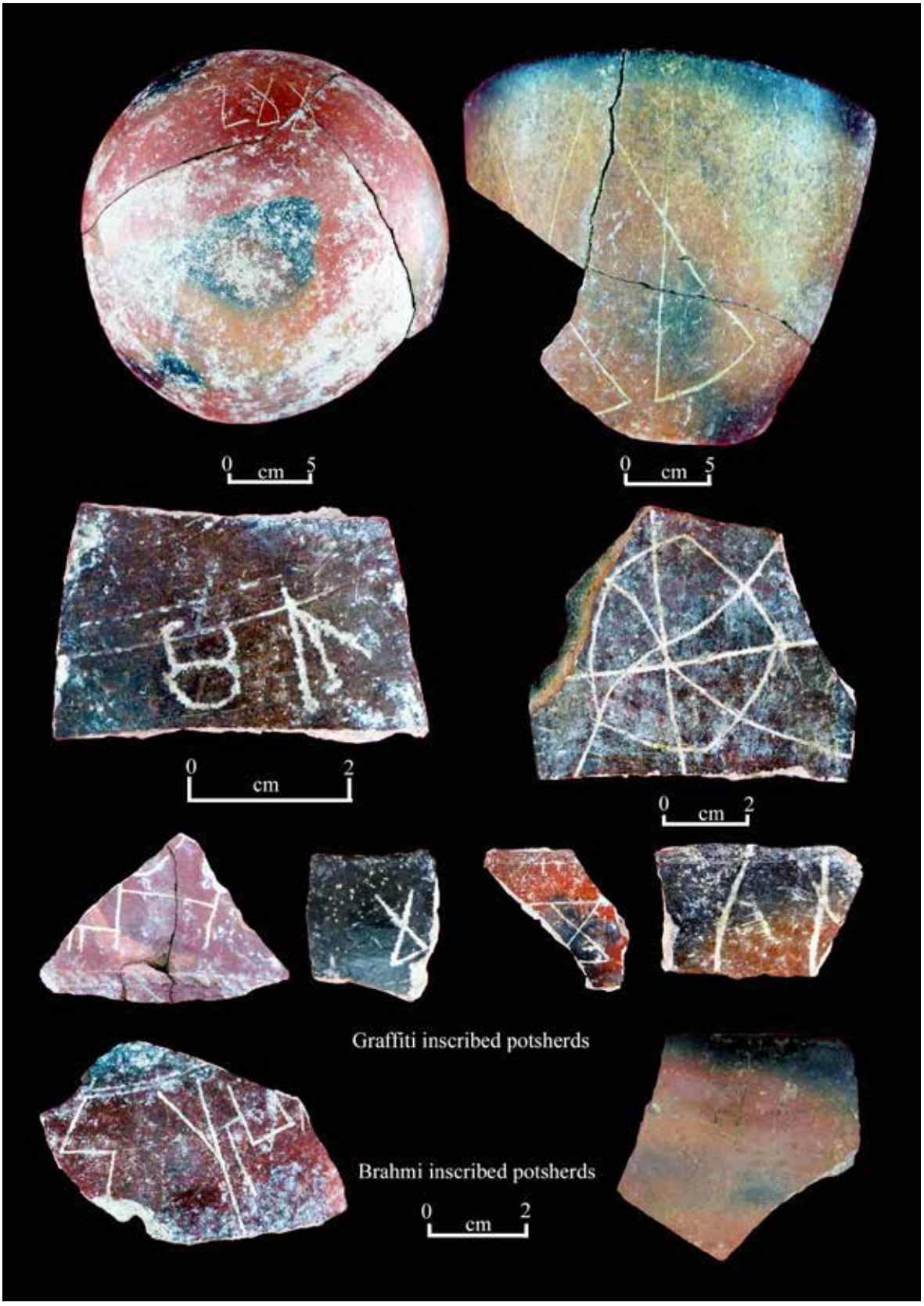


Fig. 2.77. Korkai: Graffiti and Brahmi inscribed potsherds

Fig. 2.78. Korkai: Terracotta pipes

painted potsherds were also collected at the depths of 220-235 cm and 240-250 cm. Most of them were red slipped ware potsherds. Besides, a kiln-like feature was noticed at a depth of 200-205 cm in the northwest of the quadrant of the trench, along with post holes with a diameter of 42 cm very close to the western wall of the brick structure.

Nine cylindrical pipes having a height of 27 cm and thickness of 2 cm with a diameter of 27.5 cm kept vertically placed one above the other were observed on the western section of the trench and the northern side of above said rectangular structure (Fig. 2.78). The top edge of the pipe is noticed at a depth of 30 cm and continues up to a depth of 244 cm resulting in a 215 cm height. Interestingly, the terracotta pipes had perforations. As the top portion is dismantled, it cannot be assessed categorically. However, the arrangement of the pipes, the perforations observed in the terracotta pipes and the dimensions suggest that these pipes might have been used to discharge the toilet waste.

In Locality-4, three trenches (E14, E15 and F12) were laid. It yielded a number of red ware in the upper level, and the black-and-red ware and red slipped ware dominated in the lower level. Most of the red ware is storage jars, carinated and globular pots. Basins, bowls and dishes are found in black-and-red ware and red-slipped ware. Graffiti-bearing sherds and Damiḻi (Tamiḻ-Brāhmī) inscribed potsherds were encountered in this locality. Other antiquities are rubbing stones, glass bangles, beads of glass, quartz, shell, and fish bone, terracotta figurines, gamesmen, spindle whorls, wheels, smoking pipes, lamps, hopscotches, shell bangle pieces with designs, iron chisels, fish hooks, rod and nails, stone balls, rubbing stones, weights and copper rings.

Excavations at Maṟamangalam

Maramangalam is located a crow-fly distance of 3 km north of Koṟkai. The suffix *maṅgalam* suggests that it must have been a Brahmin settlement granted by the Pandya king (Māṟaṉ) during Medieval times. To understand the nature of the medieval settlement, a trench was laid (A1) behind the Maramangalam Primary Health Centre. The antiquities such as beads of glass, shell, fish bone, ivory and terracotta, bangles of glass, shell and copper, rings of copper, shell, glass, terracotta lamps, figurines, hopscotches, smoking pipes, spindle whorls and balls, iron nails, a knife and a coin of copper were collected from the 195 cm cultural deposit. The coins of Madurai Nayakas and Dutch coins (VOC -Vereenigde Oostindische Compagnie) were unearthed at the upper level, and Chinese celadon ware was encountered in the middle level. The major antiquities encountered in the excavation are shell bangles, glass bangles, Chinese celadon ware, beads of shell, glass and terracotta, iron slag, cowrie shell, coins, smoking pipes, hopscotches, shell rings, rubbing stone and an unidentified terracotta object.

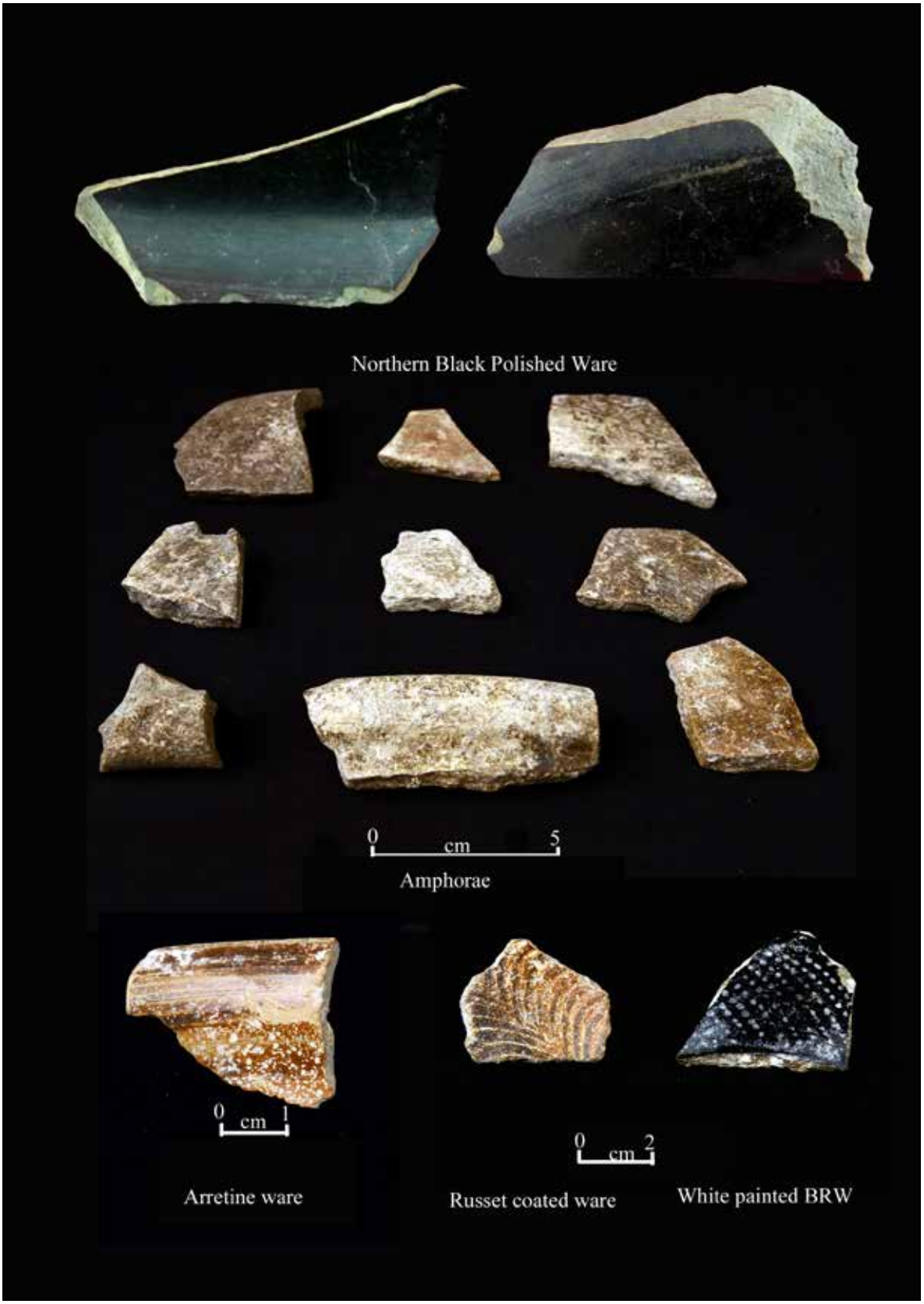


Fig. 2.79. Korkai: Potsherds NBPW, Arretine and Amphorae

Ceramic Evidence of its External Contacts

Buff ware, Arretine ware and amphorae sherd, Northern Black Polished ware/black slipped ware, and a Torpedo jar piece were unearthed in the excavation (Fig. 2.79). These sherds are so important in the archaeological context as they provide the internal and external contacts of Korkai port. The Arretine ware and amphorae sherd show contact with the Roman world whereas the Torpedo jar suggests contact with the West Asian world, particularly with the Arab peninsula. As stated elsewhere, the NBPW/BSW indicates contact with the Gangetic valley.

Among the antiquities, terracotta objects dominate the scene. The shell objects, particularly objects such as rings and bangles, are the major artefacts collected in the trenches. The available artefacts and antiquities, such as shell objects, conches with cut marks, graffiti-bearing potsherds, Damili inscribed potsherds, Indo-Pacific glass beads, black-and-red ware, Northern Black Polished ware, Black slipped ware, Arretine ware, amphorae sherds and the size of the brick, demonstrate that Locality-I belongs to the Early Historic period. The earlier C^{14} date of 785 BCE and the presence of NBP ware and Black Slipped ware of Gangetic origin indicate that the Korkai port was in existence from the time of the 8th century BCE. The AMS date of 1155 BCE obtained for the paddy collected from the urn at Sivagaḷai indicates that the collection of a large quantity of paddy from the Iron Age urn burials at Adichanallur indicates that rice cultivation was in full swing in the 12th century BCE itself. The date of 850 BCE obtained at Adichanallur also supports continuous rice cultivation.

Further, Korkai Bay is known for its pearl fishing and chank diving. The recent ethnoarchaeological study made on the traditional diving practice in the Gulf of Mannar helps to understand the economic viability of the pearl fishing that existed in the pre-Christian era. Even today, the people of the Gulf of Mannar go for diving without any breathing aids to a depth of six fathoms, and they stay on the sea floor for about 54 seconds (Athiyaman 2000). This study has proved beyond doubt that the references found in the literature and foreign accounts are not an exaggeration. The earliest account of pearl and chank fishery in Tamil Nadu is that of Megasthenes (Arunachalam 1952:23). Though the method of diving is not adequately recorded, many poems of the Sangam literature such as *Kalithokai* (131:22) and *Akanāṉūṟu* (350:10-11) talk of the fishing community Paratavar (Barata in Sri Lanka) who resided at Korkai engaged in pearl fishing (*Ciṟupāṇāṟṟupaḍai* 56-58). The *Periplus Erythrean Sea* mentions that condemned criminals were used at the Pandya port Korkai in the Gulf of Mannar (Mc Crindle 1984:140). Strabo, Pliny and Ptolemy also refer to pearl fishing. Mahāvamsa refers to eight kinds of pearls presented to King Asōka by King Dēvanāmpiya Tissa (250-210 BCE) and Duttagāmaṇi (161-137 BCE), who decorated his hall with pearls, which establishes the existence of pearl fishing in the Gulf of Mannar as early as the 3rd

century BCE (Geiger and Bode 1950:207). Its fame and recognition, both at the national and international levels, should not be taken lightly. The port Koṟkai on the east coast of Tamil Nadu and Mantai on the west coast of Sri Lanka are the two important marketing centres for the pearls of the Gulf of Mannar.

Thus, the Tamiraparani is one of the important river valleys of Tamil Nadu, which connects Sri Lanka through the Mannar Gulf, and Kerala through the Kollam pass near Tenkasi. The deltaic region is fertile and known for its agricultural production. Large quantities of paddy grains exposed in recent excavations at Sivagaḷai and Adichanallur support the view. Beyond all these resources, the pearl is one of the important marine resources, which was extensively praised in all literature, both in Indian and Foreign Accounts. Its relation with Sri Lanka dates back to microlithic times. Allchin and Dereniyagala identify that the tools of *tēri* sites located a few kilometres away from the rivers are identical, and there are a good number of hypotheses on the formation of *tēri* sites (Deraniyagala 1992). Unfortunately, there are hardly any scientific investigations to substantiate our knowledge since Zeuner and Allchin (1956:4-20).

The emerging scenario of recent years suggests that the cultural contact between India and the neighbouring island country of Sri Lanka is intense and close. The recent spurt in the archaeological activities of Sri Lanka and India, particularly in south India, reflects these indicators more explicitly. The similarity between the microlithic tools of *tēri* sites (Deraniyagala 1992); the structural and cultural similarities between burial monuments (Seneviratne 1984:237-307); the story of the conquest of Sri Lanka by prince Vijaya and his subsequent marriage with Pandya princess; the account of the establishment of Buddhism found in Mahāvamsa and Dīpavamsa; the use of Brāhmī script for writing Prakrit and Tamil; similarities in coins found in India and Sri Lanka are the fine indicators of continuous cultural contacts between these two regions. Koṟkai must have served as one of the launching pads for cultural and commercial interactions with Sri Lanka. These indicators are interrelated and cannot be seen in isolation, as it had wider implications for understanding the cultural matrix of the region.

The above evidences explicitly convey the importance of pearl fishery in the Gulf of Mannar. Before reaching international trade, these pearls would have been exploited for local consumption. These practices of pearl fishing through traditional diving methods would have taken several centuries. The city Koṟkai, the first capital of the Sangam Pandyas, might have been established by the time itself. The Adichanallur and Sivagaḷai urn burials would not have yielded such high-valued materials, such as high tin bronze objects and gold objects, without outside contacts. To get such high-valued material, they

should have exchanged some equally valued material such as pearls and conches. The pearl fishery is, in one way, inter-related with the objects that were recovered in urns. The bronze material might have come from outside Tamil Nadu as one hardly gets any commercially exploitable copper ore in Tamil Nadu. The radiometric dates obtained from Korkai, Sivagaḷai and Adichanallur excavations advocate that these settlements were in existence in 1000 BCE itself.

The two major tradable commodities, namely conch and pearl, accelerated the establishment of the port at the mouth of the river Tamiraparani (Porunai) and the growth of international transoceanic trade, which fetched a lot of revenue to the treasury, leading to the economic prosperity of the region during Early Historic times. The accumulation of sediment or siltation at the mouth might have resulted in the disuse of the port, leading to a shift in port activities from Korkai to Palayakāyal and then to Punnakāyal and further south to Kayalpattinam, where one could observe the medieval evidence such as Chinese celadon ware, Chinese coins and medieval pottery. The medieval literature and epigraphical records also support the emergence of new/alternative ports. The Sangam literature provides enormous data on the existence of Korkai port during Early Historic times, whereas the Medieval inscriptions found on the walls of the temples at Korkai and Maramangalam hardly mention that Korkai survived as a port during medieval times; instead, Palayakayal, Punnakayal, and Kayalpattinam are referred to as ports. It suggests that the utility of the Korkai port came to an end; however, the existence of the settlement continued to date.

8. Mangudi

Mangudi (9° 21’ 25.902” N; 77° 31’ 42”N) is located in Tenkasi taluk, about 20 km south of Rajapalayam town on the main road leading to Sankarankovil. The site is located on the border of Virudunagar and Tirunelveli districts. It lies on the northern bank of Deviar, originating from the slopes of the Western Ghats and is a source of Vaippar. The occurrence of microlithic tools in this site and other sites in its vicinity prompted the Tamil Nadu State Archaeology Department to undertake excavation in the year 2002. Two separate mounds, namely *nāyakkarpuñjai* and *liṅgathiḍal,* were identified at a distance of two kilometers east of Mangudi village. The Deviar runs adjacent to the mound in the west-to-east direction. The mound *nāyakkarpuñjai* with a height of 2.50 meters, contained predominantly Early Historic remains along with microlithic tools in an area of about fifteen acres. While the other mound *liṅgathiḍal,* contained medieval remains. Explorations conducted around Mangudi revealed many sites such as Arukankulam, Achchankulam, Senthattiyapuram, Karisattan and Mudivanangan kanmay with microlithic tools (Shetty 2002:9).

To ascertain the early habitation and subsequent developments that occurred at the site, ten quadrants, namely MGD 1–10, were taken for excavation and three trial pits were laid at *liṅgathiḍal* and the eastern end of *nāyakkarpuñjai*. The total cultural deposit at the site is not clear from the report, but it purportedly reached a maximum depth of 2.25 meters in the quadrant MGD–1. Most of the quadrants revealed a uniform stratigraphy. The lowermost level, i.e. Layer 1, with compact clay and yellow-coloured soil, yielded microlithic tools in a stratified context, notably in the trenches of MGD–1, 4, 6, 7, 8 and 10. According to the excavators, the vital evidence observed from the site was the cultural break between the microlithic and the successive Iron Age phases.

The occurrence of red ware in MGD–1, 3 and 6 , along with quartz pieces and tools, has not been defined properly, whether it occurs with tools decisively or deposited as an intrusion through pit activities. The quadrants MGD–4, 6 and 10 yielded a large quantity of raw materials in quartz, chert and finished tools. The absence of tool typology eludes a proper understanding of different types of tools and also of the technology adopted by the early settlers. However, the available data suggests that the microlithic tools were probably comprised of blades and flakes.

Based on the sterile layer noticed between the microlithic and Iron Age phases, it has been argued that the site was not occupied for some time until the arrival of Iron Age settlers. This is quite in contrast with the site of Tirutangal, where such a position was not clear, where the microlithic tools were found in both levels. But again, there is not much clarity about the transformation of the Iron Age level to the Early Historic period. A broken stone celt and a ring, presumably found in the upper level at a depth of 1.35 meters from a pit, could be seen as an isolated find and not indicative of a separate period (Shetty 2002:16–17).

There is no clear-cut demarcation about the thickness of lower-level yielding microlithic tools, but they seem to range between 0.40 and 0.80 meters as per the deposit projected through section drawings of different quadrants. The intermediate sterile level, i.e. 1–A with clayey yellow-coloured soil, measured 0.25 meters. The upper level with powdery earth in brown to ash colour altogether labelled as the ‘megalithic period’ was the prosperous period yielding a wide range of artefacts along with russet-coated painted ware, a few rouletted ware and five inscribed sherds. In MGD–4 and 7, traces of some structural activities were noticed in the form of brick bats and broken portions of a terracotta ring well in MGD-7, with one having some graffiti marks.

The ceramic assemblage consisted of black-and-red ware, red slipped ware, black ware, coarse red ware, perforated sherds, spouted vessels, a limited number of russet-coated

painted ware and rouletted sherds. A large quantity of potsherds (200 in number) was found engraved with post-fired graffiti marks. The excavations revealed a wide range of antiquities like semi-precious stone beads, glass beads, soapstone, crystal, terracotta beads, spindle whorls, terracotta figurines, lamps, balls or weights, gamesmen, discs, glass, shell bangles, deer horns, an iron dagger, a copper needle, rings and bangle pieces. Among the inscribed sherds, a black-and-red ware sherd found at a depth of 1.08 meters at MGD–1 contained four letters in Tamil–Brahmi characters reading *kuṟumāṅkaḷa āthaṉ yiyānai pe…* interpreted as *āthaṉ yiyānai* belonged to *kuṟumāṅkaḷa(m).*

On the basis of accumulated material remains, the excavators identified two broad cultural periods, i.e. Period I to the Mesolithic period, datable to c. 4000 BCE and Period II to the Iron Age/Early Historic period, datable to c. 300 BCE–300 CE. The trial diggings made at *liṅgathiḍal* and on the eastern slope of *nāyakkarpuñjai* yielded only medieval remains in the form of red ware, tile pieces and spouts. The finding of an inscription slab in characters of c. 12th–13th century CE at *liṅgathiḍal* mentioning a military settlement at the village confirms this fact. The surface explorations at the mound also yielded sculptures datable to c. 9th–13th century CE, architectural members of a temple, Chinese porcelain sherds, copper coins of Chōḻa king Rājarāja I, later Pandya coins, etc. Copper coins datable to the Nayak period found from the trial trench nos. 2 and 3 at nāyakkarpuñjai indicate the prolonged cultural continuity to c. 16th–17th Century CE (Shetty 2002). Further to this, recently a Roman silver coin datable to c. 1st century. CE issued by Augustus Caesar has been identified from a private collection, which is said to have been collected from the locality called siṅgathiraḍu, very near to the excavated site. This discovery adds a new dimension to the external contacts maintained by its settlers (Santhalingam 2011:189–190).

9. Perumbalai

Perumbalai (11.9635725 N; 77.9374409 E) is a small village situated 503 m above MSL on the right bank of the Nagavathi River, a tributary of the Palar. Palar is one of the major tributaries of the river Kaveri. Perumbalai lies on the Dharmapuri-Mechcheri-Pennagaram road at a distance of about 25 km from Pennagaram and 42 km north of Dharmapuri in the Dharmapuri district of Tamil Nadu (Fig. 2.80). The huge habitation mound lies just opposite to the Semmanur Siva temple, about 2 km northwest of Perumbalai on the Perumbalai–Samathal road. The term Perumbalai means "huge *palai*" (*perum* + *palai*; *perum* > huge, *palai* > a dry pastoral land), representing a land mass in a dry pastoral zone. The general topography of the site does not show any major features other than a few isolated hillocks and rivulets, which act as a source of water during the rainy season (Fig. 2.81).

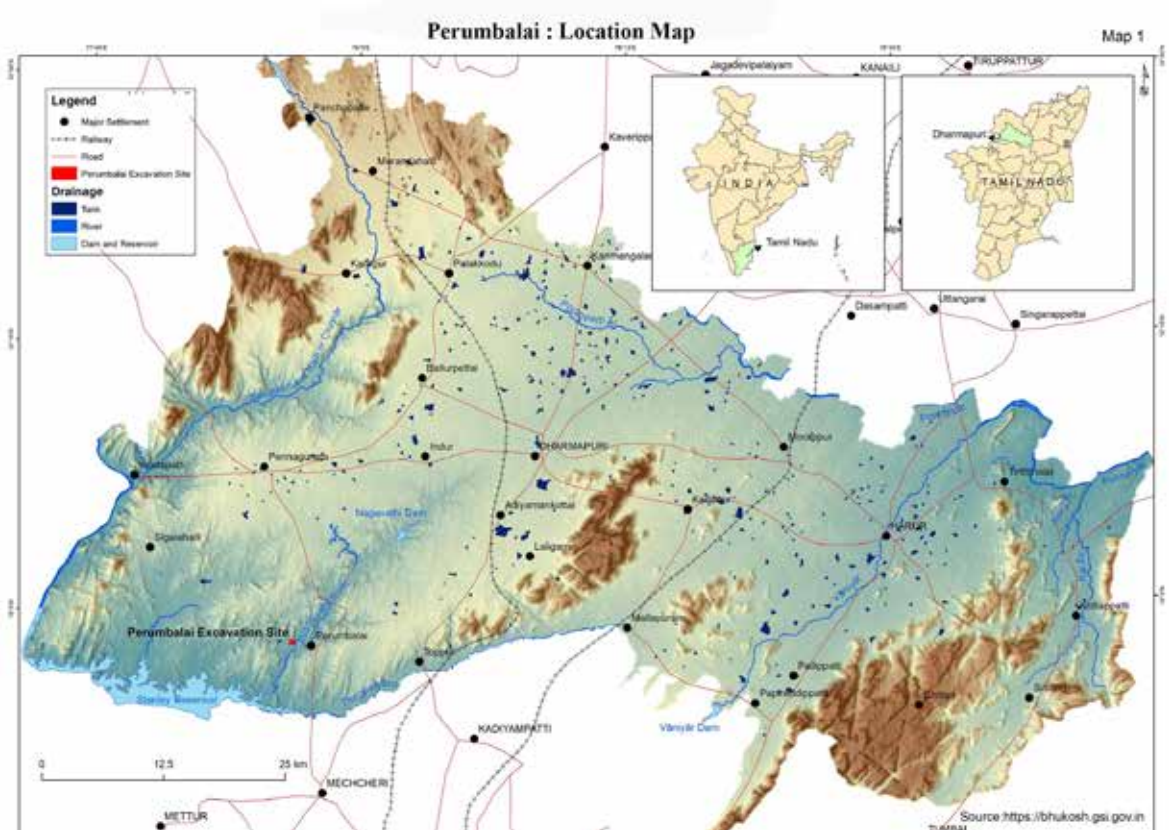


Fig. 2.80. Perumbalai: Location of the site

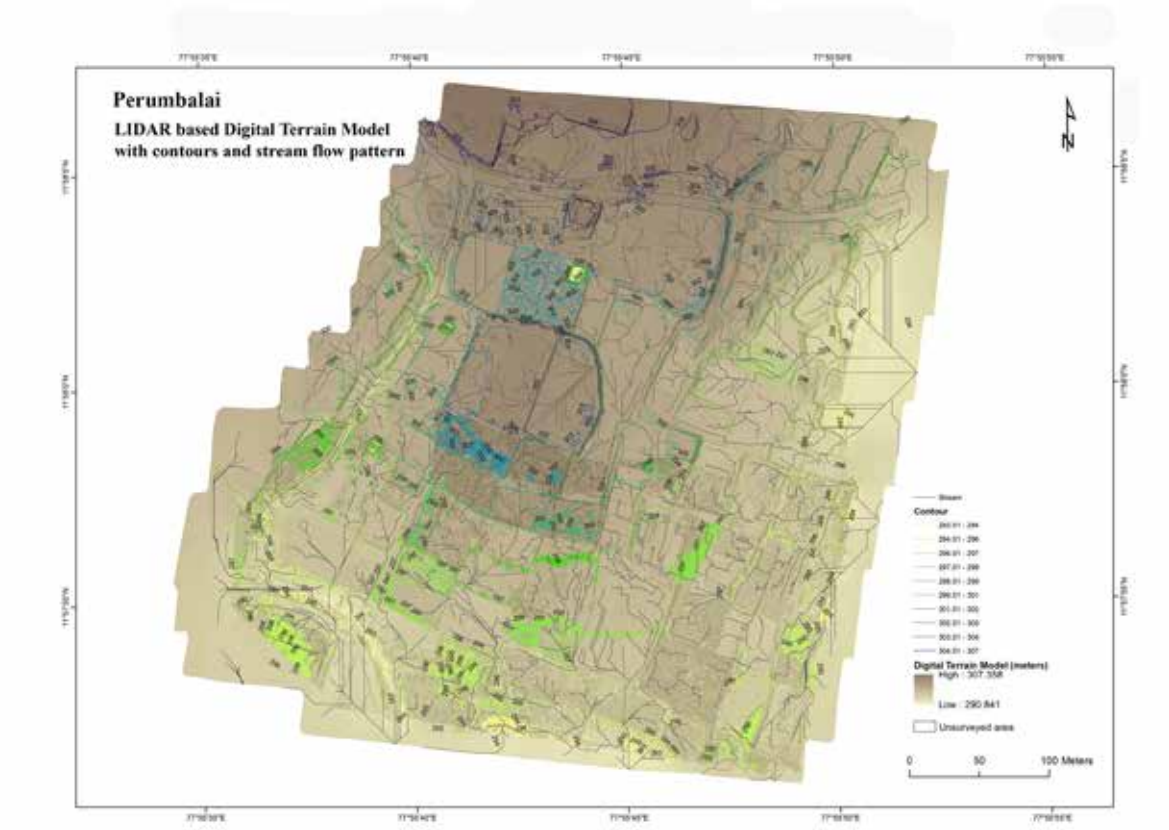


Fig. 2.81. Perumbalai: Habitation mound

The geological formations of the district mainly belong to the Archaean age, along with the rocks of the Proterozoic age. The charnockite group occupies a major part of the southern part of this district, and it is mainly charnockites along with some small bands of pyroxene granulites and magnetite quartzite. The alkaline complex is represented by epidote-hornblende gneiss, ultramafic, syenite and carbonatite, and these are distributed in the eastern part of the district. Innumerable basic dykes and felsite, quartz, barite and pegmatite veins form part of the alkali complex. Charnockite and dolerite occur in the hillocks and are the most widespread rock types in the study area. A similar, type of charnokite and dolerite boulder formations was used for raising megalithic monuments, erecting temples, constructing houses and installing memorial stones.

Historicity of Perumbalai

The 13th century CE literary work *Koṅgumaṇḍala Satakam,* written by Karmekavairayar of Vijayamangalam, refers to this place as the northern boundary of the Kongu country, a territorial division comprising the Coimbatore, Erode, part of Dharmapuri and Salem regions. The village met with megalithic burials, hero stones and a Siva Temple of the Hoysala period. More than 50 cairn circles were observed in the elevated field near the canal dug recently in the midst of the burial field to the north of the Semmanur Sivan Koil (Fig. 2.82). Two memorial stones were found in front of the temple (Fig. 2.83). There are three rectangular slabs, which have a Hoyasala inscription of Viraballala written in Tamil language and script (Rajan 2000:174). The first memorial stone had a hero holding a sword in his right hand, raised above his head, and kept in a charging position. Two horses were shown in front of him one below the other. The top horse had a rider piercing a lance/spear against the hero. The second memorial stone, interestingly, had an unusual panel. Three soldiers were shown. The hero holds the tuft of the enemy in his left hand, and his right hand holds a pruning knife raised above his head. It looks like he is going to behead the opponent. Further, the hero also stands on the body of a slain soldier. Besides, a small hill range adorned with a Siva temple on the top of the hillock called *Maruthamalai* running in north-south direction is seen at the eastern side of the village. A few megalithic stone circles entombing urn burials were scattered on the western slope of the hillock.

K. Chandrasekhara Menon of the Southern circle of the Archaeological Survey of India explored this area in 1969–70 and identified the presence of megalithic burial at Perumbalai village (Menon 1973:35). In 1997, K.Rajan resurveyed the village and identified the habitation mound scattered with a rich pottery assemblage in the mound locally called *Kottaimedu* (Rajan 1997:179-180). According to him, the site consists of different cultural periods ranging from the Iron Age to the Medieval period. The presence of russet-coated

Fig. 2.82. Perumbalai: Iron Age graves

Fig. 2.83. Perumbalai: Memorial stones

painted ware, a medieval Siva temple and hero stones found in association with 30 hectares (74.13 acres) of habitation-cum-burial site located next to *Pannaparaikaradu* hill prompted him to record it as one of the important archaeological sites. During the exploratory survey, it was noted that the habitation mound represents a multi-layered occupation, deserving a large-scale horizontal excavation. The habitation mound called *Kottaimedu* covering 25 acres with a 3-4 m cultural deposit led to the excavation in 2022.

Recent Excavations

The huge habitation mound located on the right bank of a small rivulet called *Aandikattupallam,* originating from the nearby hillock, serves as a source of water. The western and southern side of the mound is surrounded by this rivulet. Keeping in view the contiguous nature of the mound, the entire mound is labelled as Locality – 01. The key plan of Perumbalai (PBI mound Locality - 01) shows that the entire area was laid out in a grid network, each measuring 5 m x 5 m (Fig. 2.84). The mound was subdivided into 4 zones having cardinal directions. The centre of the mound has been fixed roughly keeping in view the surface feature of the habitation. In total, 17 trenches (Trenches – B1, B2, C1, C2, D1, D2, E1, E2, E3, E4, F1, F2, F3, F4) were laid on the top of the mound, and it yielded a maximum cultural deposit of 290 cm. Similarly, X 19, Y 19 and T - 01 were laid on the periphery of the existing habitation mound (Paranthaman 2024).

Cultural sequence

The exposure of the habitation mound containing a 3 m cultural deposit records a continuous settlement covering a period from the 6th century BCE to the 13th century CE as per the AMS dates and epigraphical evidence (Fig. 2.85). The thickness of the layers is nearly 40 cm to 100 cm in height showing the incessant occupation. The evidence of the earliest human occupation goes back to the terminal phase of the Iron Age. Based on AMS dates and associated cultural materials such as ceramics, terracotta figurines, graffiti-bearing sherds and other materials, the cultural deposit is divided into three cultural periods namely, the Iron age, Early Historic period and Early medieval period from bottom to top, datable respectively 6thcentury BCE to 3rd century BCE, 3rd century BCE to the 4th century CE and 4th century CE to 13th century CE. The last-mentioned cultural level had a thin cultural deposit that coincides with contemporary temple activities. It seems, since then, the settlement has shifted to the present village.

Period-I is represented by layer-4 and has a deposit of about 30 to 95 cm thickness lying over the natural soil, containing cultural material of the terminal phase of the Iron Age. It

Fig. 2.84. Perumbalai: Excavated trenches

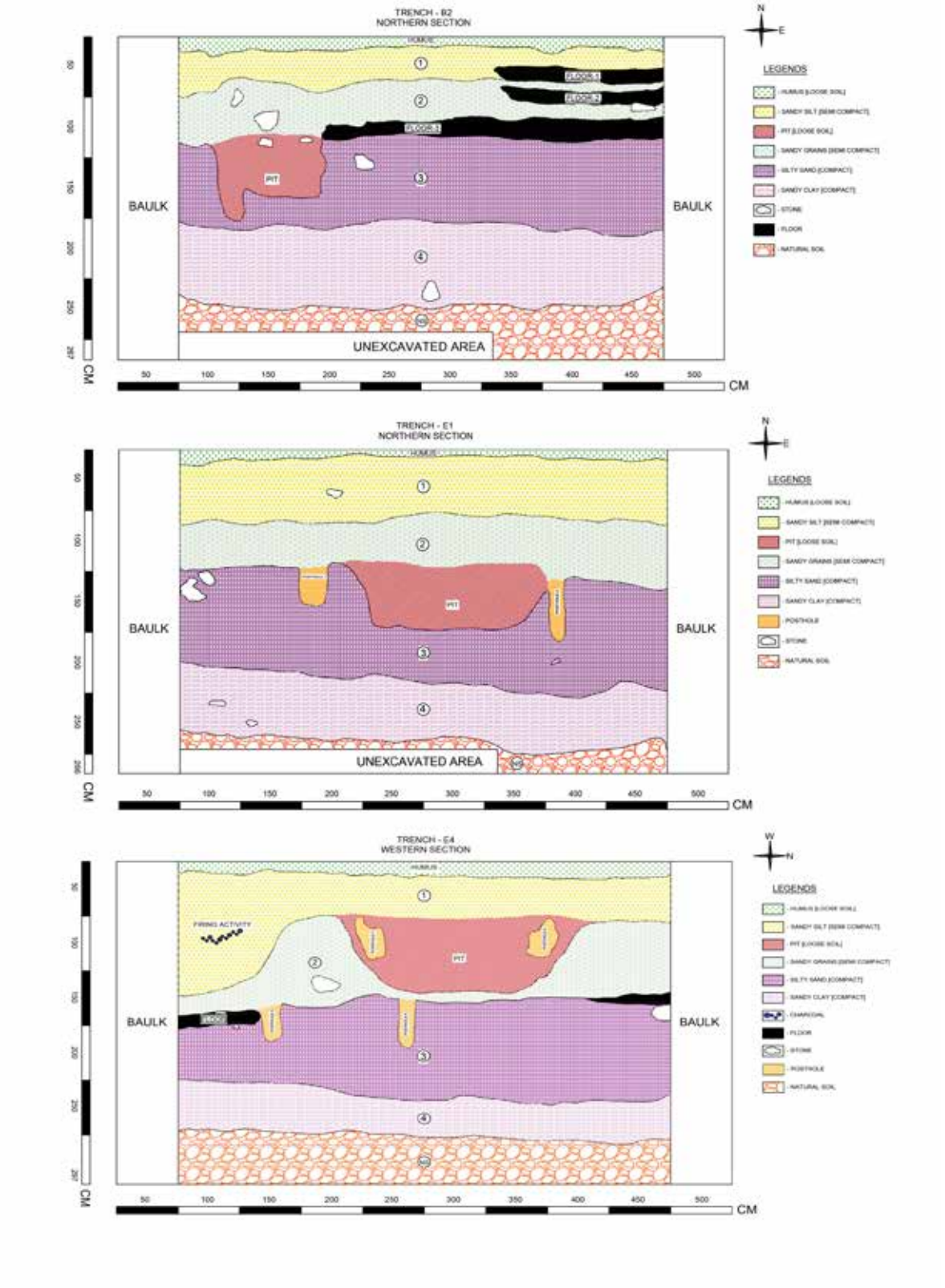


Fig. 2.85. Perumbalai: Stratigraphy

is compact, reddish brown, and contains nearly 75% of fine black-and-red ware and black ware. The black-and-red ware is made of well-levigated clay, with a highly polished and burnished surface and is generally treated with a bright slip. The majority of black-and-red ware and black ware are thin in section, although medium varieties are also found. Potsherds with graffiti marks were identified in abundance. Most of the graffiti was geometrical signs and natural elements. The sherds of a fine variety of bowls and dishes are mainly found in this layer. However, the pieces of the jar, miniature pot and other pottery types are also found sparingly. The bowls and dishes are mostly plain with occasional grooves on the exterior. The bowls have featureless rims, both in-turned and concave-sided necks and round bases. The dishes are comparatively smaller in shape. Apart from the potteries, a few artefacts such as glass and semi-precious stone beads like etched carnelian and soapstone were encountered in this layer. Pit activities were identified in a few trenches such as C-1 and D-1. The pit at the northern section of C-1 was dug deep into the natural soil, whereas the pit at the eastern section of D-1 contains burning activity inside the pit, and residues of charcoal and ash deposits are noticed. The pit activities and postholes are fewer in number compared to layer-3.

Period-II, represented by layer-3, is assigned to the Early Historic period based on the material evidence found in these layers. It is compact with dark brown soil with notwithstanding, the thin and fine variety of black-and-red ware continued, and the medium and thick variety of black-and-red ware is comparatively more, particularly in the upper level of this period. Along with black-and-red ware, black ware, red ware and other potteries are also found, of which the latter is predominant, whereas the presence of the former is meagre. The potteries are basically for serving purposes. Potteries with graffiti marks were identified in greater numbers on all types of pottery. Most of the graffiti was geometrical signs and had natural elements. Pieces of big storage pots, water pots and oven pieces are also found in these layers. It seems there were lots of burning activities during this period, mainly for cooking and some kind of industrial purposes. The evidence of charcoal and ash materials is found mainly in layers. Several pits of this period were identified. Some of the pits were dug deep even into the natural soil. The pit activities are identified in trenches D-1, E-3, E-4 and F-4 containing charcoal and ash deposits. Trench D-1 contains postholes in all the sections at this level. Two postholes identified in the northern section of trench F-1 were dug at close intervals. But the depth of the holes varies. There are also pits in the western section of F-4, one at the bottom level, cutting into the natural soil containing postholes on either side of the pit. The pits were mainly dumped with animal bones, brickbats, pieces of unused pottery, and some contained firing activities. The bones of cattle, some of which have been found in the pits, indicate their probable use. Some of the charred bones found in the pits suggest that they might have been roasted in an open fire. Hardly any evidence has been found in the

excavation about the settlement pattern or house plan of the people. Perhaps, this area was not the actual residential area but was used for some other activities. In this layer, more than 20 postholes were identified. The majority of them were not found in a pattern. However, the traces of floor or pathway are noticed in the trenches such as B-1, B-2, C-1, C-2, D-1 and D-2 at a depth of about 1 m. The thickness of the floor is about 6 to 10 cm. The floor was made by ramming small pieces of gravel mixed with soil, and also perhaps lime, and finished with lime or earthen paste.

Layer-2 starts just above the floor, representing a transition from Early Historic to Early Medieval. It seems that some kind of industrial-based activities and pastoralism are the mainstay of their economy. Most of the trenches record firing activities with pit marks; however, they exhibit interesting evidence of industrial activity. In trench D-1, an elongated pit with a lot of ash materials is noticed at a depth of about 87 to 260 cm. In and around the pit are found the lumps of slag with the smoothened wall, probably the mud slag. The glass bangles are mainly black. Yellow and blue coloured bangle pieces are also found in smaller quantities. Apart from glass beads and bangles, beads of terracotta and semi-precious stones, terracotta figurines, hopscotches, and other objects were also found in the Early Historic level. The spindle whorls, found at the same level, perhaps demonstrate the cotton-weaving activity of the people. They were used for spinning cotton. The excavation has brought to light, a few potsherds with graffiti marks belonging to the Early Historic period. The graffiti of post-firing scratch marks are found on all types of pottery. The terracotta figurines belonging to the lowermost depths of stratum 2 (i.e., Early Medieval period) not only exhibit their artistic excellence but also show maturity in their art. These figurines were comparable to the terracotta figurines found at other sites in Tamil Nadu, such as Arikamedu, Modur and Kaveripattinam. The figurines are made of both hand-modelling and moulding techniques. The torso of a female human figure measuring 8.5 x 5 cm found at the lower level of layer 2 is quite interesting. It is probably datable to the 5th-6th centuries CE. This figure was produced using the moulding technique. In fact, the moulding technique was in vogue from the early centuries of the Common Era onwards. There are many pieces of terracotta lamps with or without wicks found in the excavation. One of the terracotta lamps has a golden colour coating, which is perhaps achieved by using mica exclusively on the top surface.

Period-III represented by layer-1 is assigned to the Medieval period based on the cultural materials found in these layers. Coarse red ware and red slipped ware are found predominantly in this period. A considerable number of black slipped ware is also found. The major shapes of redware are globular pottery, dishes, deep bowls, vases, lids of different varieties, etc. The bowl with a tapering body and featureless rim is a common type in red ware. The number of spouts of different designs and shapes, mainly in red ware, is also

found. Few perforated potteries are uncovered at this level. The sturdy and degenerated black-and-red ware and black ware found in smaller numbers. The fine black-and-red ware is almost absent, particularly at the top level. Although there is no settlement pattern or house plan encountered in this period, the occurrence of a lot of brickbats indicates some sort of structural activity during this period. Interestingly, a stone alignment is identified in trench F-1 as a raised platform representing some kind of activity. Stone rubbles were used in a formation, and a few pottery pieces were collected on it.

Flooring activities

In total, three-floor levels (Floor I-III) were identified in trench B-2, whereas in all other trenches, a single floor (Floor-III) was noticed at a depth of 83 cm. Floor–I is sealed by layer-1 made of pale brownish clay, and lime nodules were found on the eastern and northern sides of the quadrant at a depth of 25 cm. The minimum and maximum thickness of the floor are 09 cm and 14 cm, respectively. The floor level is not too strong compared to floor level–III. Floor–II is sealed by layer-2, and the minimum and maximum thickness of the floor are 10 cm and 20 cm, respectively. The floor level is comparatively much stronger than floor-I. The construction materials used to construct the floor are entirely different from those of floor I. The composition of the floor contains stone chips along with tiny pieces of pottery as a base material mixed with clay, fine sand and silt. Small, round, granitic pebbles were also added to strengthen the base of the floor. The top layer of the floor contains a mixture of calcrete and calcium carbonate as a composite material along with clay and lime plaster. This kind of strong floor might have been used for some kind of industrial activities. Floor–III at a depth of 83 cm has a minimum thickness of 11 cm and a maximum thickness of 18 cm. The floor level is comparatively much stronger than floors I and II. The composition of the floor is identical to that of floor-II.

Graffiti

One of the important features of the excavation is the occurrence of a large quantity of graffiti-bearing potsherds. Nearly 1028 inscribed potsherds were recovered from the limited excavations. The total habitation mound covers an area of more than 1 lakh sq.m, and the excavated area constitutes merely 175 sq.m. The occurrence of more than 1000 inscribed potsherds from a meagre 0.175 % of the excavated area suggests the importance and significance of the graffiti marks. A few of these occur repeatedly from different levels. The more common graffiti marks are geometrical signs, particularly two oblique lines meeting a central vertical on the top. The other important marks are the star, U- shaped, T-shaped sign with two small vertical strokes hanging at either end of the horizontal stroke, surmounted

Fig. 2.86. Perumbalai: Graffiti inscribed potsherds

on the top of the two oblique lines filled with horizontal strokes at regular intervals, bow and arrow and ladder (Fig. 2.86). Swastik-like symbols were also collected. Interestingly, a complete black-and-red ware bowl with ring stand containing a swastika sign is exposed. These graffiti marks are confined to the Iron Age and Early Historic period.

Ceramics

The black-and-red ware of the Iron Age and Early Historic period unearthed from the habitation is generally fine, well-baked, and brightly polished. The pots are wheel-turned, and the clay is well levigated. The black-and-red ware of the early medieval period is comparatively coarse in variety and also dull in colour. The common shapes in this ware, including variants, comprise several kinds of bowls, dishes, vases, conical vessels, small jars, carinated pots and others. The black ware is comparatively less well-fired. But burnishing is of a very high order. Black ware is usually thicker than the black-and-red ware but thinner than the red ware. Some of the normal shapes of this ware are: funnel-shaped lid, knobbed and animal–topped lid, tulip vase, lipped bowl, pedestalled cup, ring-stand of different varieties, small pot, carinated bowl, etc. The red ware of both highly polished with bright red-slip type and terracotta-coloured with a dull slip or wash type is found. The latter category has both thick and medium types. The red ware of the Early Historic Period is mostly plain but is occasionally decorated with incised lines and other patterns. Besides, large storage jars are a predominant form. Other common shapes of red ware are legged jars, huge globular pots, ring stands, conical-based bowls, pyriform jars, basins, lids, etc. The red ware pottery continued for the entire period, notwithstanding accretions to the shapes and types in each stage.

Layer-1 yielded degenerated potsherds mixed with the soil. The red ware is the predominant type in layers (1) and (2). Its number decreases rapidly and almost completely disappears in layer (4). Probably, red ware was used for day-to-day work for all purposes. They were found both in ill-fired and well-fired, made on a slow to medium wheel. It was invariably thin to medium fabric, having blackish grey cores and decorated with incised designs on the rims and shoulders. Most shapes of red ware include vases, bowls, basins, storage jars, dishes, and miniature pots. The pot becomes the predominant shape, followed by bowls, basins, lids, storage jars, miniature pots and dishes. Layer-2 yielded ceramics of finer quality. Red ware (fine variety), red slipped ware, black ware and black-and-red ware were unearthed. The majority of the wares were turned on the wheel and well-fired. The dominant ware noticed at this level was red ware and red slipped ware. The red slipped ware is another important pottery of the burnished variety in the ceramic industry of Perumbalai. The red slipped ware is called so because a thick coat of red colour slip is applied on the exterior as well as on the interior sides of the pot before firing. The colour of the pot varied from light red to deep red depending on

the basis of the thickness of the slip and firing. The pots are all wheel-made, and the texture and fabric are fine to medium. Rims are decorated with incised wavy and vertically oblique lines. This red slipped ware appeared mostly between layers (2) and (3) of all the trenches. Further, its number decreases rapidly in layer (4). The predominant shapes of red and red slipped ware are vases, bowls, basins, lids, dishes and storage jars. Sherds are mostly of fine texture and medium fabric. The bowls and pots have featureless, outcurved, everted, or convex-sided rims. Lids with control knobs are represented by featureless rims and incurved sides. Layer-3 is noticed with a finer quality of pottery. Red slipped ware, black slipped ware, black-and-red ware and a lesser amount of red ware in a fine variety were unearthed. The majority of the wares were turned on the wheel and well-fired. The dominant ceramics noticed at this level were red slipped ware and black-and-red ware. The black-and-red ware is another important pottery of the burnished variety in the ceramic industry of Perumbalai. The fine varieties of this ceramic are thin in proportion, and they are wheel-made. The pots are all wheel-made, and the texture and fabric are fine to medium. Rims are decorated with incised wavy and vertically oblique lines. This black-and-red ware appeared mostly between layers (3) and (4) of all the trenches. Further, its number decreases rapidly in layer (4). The predominant shapes of red and red slipped ware are bowls, basins, lids, pots and dishes. Sherds are mostly of fine texture and medium fabric. The bowls and pots have featureless out-turned, inverted or everted or convex-sided rims. Lids with control knobs are represented by featureless rims and incurved sides. A few decorated sherds, sherds with graffiti marks and the paintings were also found, and a perforated sherd of a miniature bowl was also noticed. Layer-4 met with black-and-red ware of finer quality and a smaller amount of brown slipped ware, red slipped ware, and black slipped ware. The majority of the wares were turned on the wheel and well-fired. The dominant ware noticed at this level was black-and-red ware and red slipped ware. The pots are all wheel-made, and the texture and fabric are fine to medium. Rims are decorated with incised wavy and vertically oblique lines. This ware appeared mostly between layers (3) and (4) of all the trenches. Further, its number decreases rapidly in layer (4). The predominant shapes of red and red slipped ware are bowls, basins, lids, pots and dishes. Sherds are mostly of fine texture and medium fabric. The bowls and pots have featureless out-turned, inverted or everted or convex-sided rims. Lids with control knobs are represented by featureless rims and incurved sides. A few decorated sherds, sherds with graffiti marks and paintings, were also found, and a perforated sherd of a miniature bowl was also noticed.

Antiquity

The excavation yielded 351 antiquities from various levels (Fig. 2.87). Taking into account of raw materials, these antiquities can be categorized as stone, semi-precious stone, terracotta, metal and bone objects. Some of them were used as toy objects, ornaments,

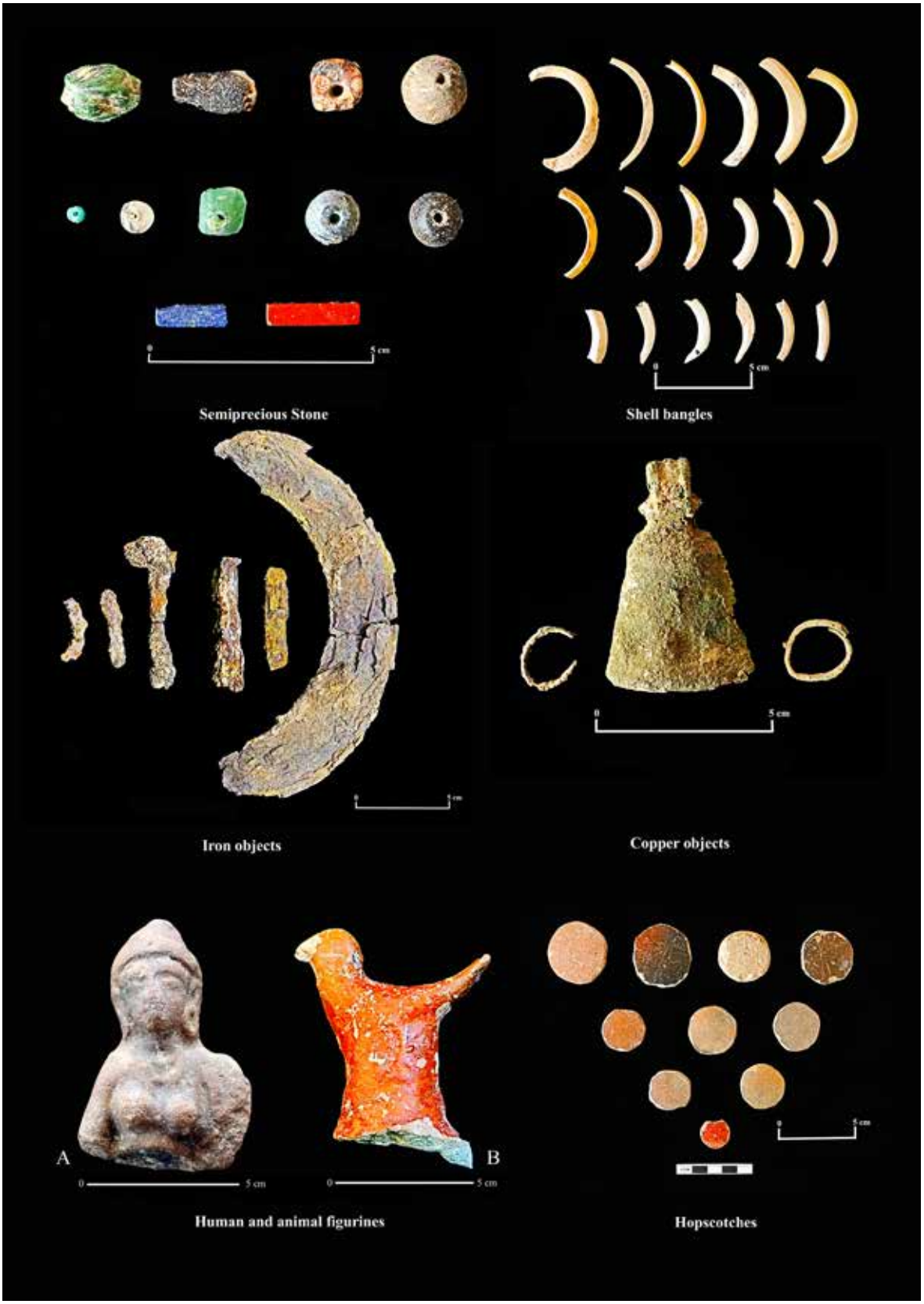


Fig. 2.87. Perumbalai: Antiquities

household objects, ritualistic objects, and implements for hunting and agriculture. Nearly 28 stone objects, such as sling balls, hopscotches, beads, balls and a few unknown objects, were encountered. These objects were generally used for gaming purposes and on very few occasions as weapons. The occurrence of two disc-shaped etched carnelian beads and a soapstone bead suggests their external contact.

The excavation produced more than 200 terracotta objects representing human and bird figurines, beads, wheels, sling balls, spindle whorls, lamps and hopscotches. Two terracotta beads, a spherical bead, and more hopscotches were recovered from the excavated trenches. A large number of burnishing tools, a piece of broken pottery with a scraped edge, having rectangular, circular, oblong or in blended triangle shape made out of coarse red ware, red slipped ware and black and redware were collected. The site has reported 12 spindle-whorls of circular variety with a central hole used as a "flying wheel in a spindle (*takli*)". The majority of them illustrated here are wheel-turned-bearing planoconvex sections. The occurrence of spindle whorls highlights the spinning activity at the site, complementing the activity of the textile industry. Almost all the whorls have medium to coarse fabric of micaceous clay, with a few exceptions of fine variety bearing red slip. Some of the hollow whorls show an important feature wherein the basal perforation is square and the upper portion is circular. Other interesting terracotta objects are human and animal figurines. These terracotta art objects are of high-quality modelling. A fragmentary portion of a well-baked clay figurine with a faded red colour, a female bust 8.5 cm in height, 5 cm in width and 2.5 cm in thickness, was recovered with a few fascinating attributes. The image is adorned with *karantamakuda* with three steps, an ear lobe decorated with a round pendant, and two necklaces around the neck. An unidentified bird placed on a raised platform is also recovered. The bird and pedestal are applied with bright red slip.

A large number of fragments of shell bangles and glass bangles of various sizes and varieties, such as a plain surface with a square or rectangular section with a single ridge, and thin bangles with circular sections, were collected in the excavation. Most of the bangle pieces were black and rarely blue and yellow.

Among the copper objects, two eroded copper rings formed with a green patina and partly broken on the bottom side were reported. An unidentified copper coin and a copper bell containing an upper projection were also unearthed.

Other important objects are sling balls of various sizes made of dolerite and other stones. These could have been used to drive away birds and animals from cultivated fields and may also be used for hunting small animals.

Megalithic monuments

The megalithic stone circles were observed at two locations. The first group of graves, consisting of more than 50 stone circles entombing cists, was identified north of the habitation mound and at the southern foot of *Pannaparaikaradu* hill. The second group of graves, consisting of 10 stone circles entombing urn burials, were identified on the western slope of the hillock *Maruthamalai*, located on the eastern side of the village. The excavation is concentrated mainly on the habitation, and none of the graves has been opened for investigation.

Chronology

To understand the time range between these cultural phases, the organic samples were carefully chosen to date the material. Four distinct charcoal samples from different trenches at various depths were collected and sent to Beta Analytic Laboratory for AMS dates. The sample (Beta-640432) belonging to the lowermost depth provided a conventional midrange date of 590 BCE and a calibrated midrange date of 649 BCE. The topmost sample (Beta 640429) provided the date of 410 BCE and a calibrated midrange date of 499 BCE. The other two samples (Beta 640430 and 640431), collected in the middle level, provided a conventional midrange date of 500 BCE and 590 BCE and a calibrated midrange date of 620 BCE and 649 BCE. All these four dates were obtained from the samples that fall between 190 and 292 cm, in the sense below the Floor-I. The black-and-red ware and graffiti-inscribed potsherds were obtained below Floor-I. The cultural material obtained above Floor-I is medieval pottery. No organic samples were dated from the Late phase. Thus, the time range that falls between cal. 499 BCE and cal. 649 BCE predominantly belongs to the early phase of the Early Historic period. The material recovered from the natural soil belongs to the late phase of the Iron Age.

The excavation revealed some interesting and inimitable information about the site, and its co-relation study helps us to understand the Iron Age and Early historical period, especially on the origin and development of graffiti marks. Graffiti sherds recovered account for more than 1000 sherds and were noticed in all types of potteries from different depths of the site. Most of the graffiti marks resemble geometric symbols. The potteries unearthed from the site at various strata demonstrate the proper chronological sequences of pottery assemblage. The pottery occurring from the lowermost level is very thin, and the fine BRW and black ware are the more dominant types. The clay used for making the potteries was fine and well-levigated clay. Undoubtedly, from the shapes and size of the pottery, it belongs to the Iron Age. The graffiti obtained at this level and above this layer yielded more in number.

Graffiti and Tamil

As per the AMS dates, the lowermost level of the site dates back to the 6th century BCE. Most of the excavated Early Historic sites, such as Vallam, Kodumanal, Keeladi, Uraiyur, Karur and many other sites, always found Tamil-Brahmi inscribed potsherds and graffiti-bearing potsherds together (Rajan 2015). However, the limited excavation of 0.175% does not yield any Tamil-Brahmi inscribed sherds. The possibilities of occurrences of Tamil-Brahmi sherds in any of the future excavations at this site will help to understand the transformation from graffiti to Tamil-Brahmi. The non-exposure of the megalithic graves also hindered our understanding of the relationship between settlement and graves. Irrespective of these lacunae, the excavation at Perumbalai revealed more than 1028 graffiti-bearing sherds from a 175 sq m digging area, having an average number of about 6 sherds per sq m. If one exposes the entire 30 ha. area of the habitation mound, then we may end up with collecting more than 1 million sherds. The significance of the graffiti marks could be understood in a larger context if we pooled all the graffiti encountered in the Early Historic sites of Tamil Nadu.

10. Porunthal

The village Porunthal (77° 28' 38" E; 10° 22' 58" N) lies on the left bank of the river Porunthilaru (also called Porunthalaru/Porunthalar), a tributary of the River Amaravathi (ancient An-porunai), at the foothill of the Western Ghat about 12 km southwest of Palani, the taluk headquarters. Porunthal lies close to the major trade route connecting the Pandya capital, Madurai, and the port Alagankulam at the mouth of the river Vaigai on the east coast, and the Chera capital, Vanji, and the Port town Musiri (Pattanam) at the mouth of the river Periyar on the west coast through Palaghat gap. The Roman coin hoard yielding sites like Pollachi (Kandaswamy 1984: 39-44), Budhinattam (Turner 1989:50) and Kalaiyamuttur (Elliot 1856-57:157-158) are located on this trade route. There are references on these highways (*peruvali*) in medieval inscriptions. The *mēlai-p-peruvaḻi* is the highway mentioned in the Kiranur inscription that goes from Dharapuram (ancient Rajarajapuram) towards the Pandya country through Palani (Vaikavur) (*SII* 5:282). The Palani temple inscription mentions another highway as *koḻumattiṟkku-p-pōṟa-peruvaḻi,* a highway that heads towards Kolumam (*SII* 5:286). It is also known as *Cēraṉaimēṉkoṇḍa-chōḻaṉ-peruvaḻi* (*ARE* 1909/139). Two medieval inscriptions issued by the celebrated trade guilds *Aiṉūṟṟuvar/Tisai-āyirattu-aiṉūṟṟuvar,* erected about 5 km from Porunthal down the stream at Thamaraikulam and Rajapuram (Seetharam Gurumoorthy 2007:149-150, 204) and one more at Kodaimangalam are located on this route (Seetharam Gurumoorthy 2007:149-150 and 204; Yathees Kumar 2011) (Fig. 2.88). The existence of important Kongu-Chola/Chera/Pandya temples on this route also vouches for our point that this route has been very active since the Iron Age.

Fig. 2.88. Trade guild inscriptions found at Kodaimangalam and Rajapuruam

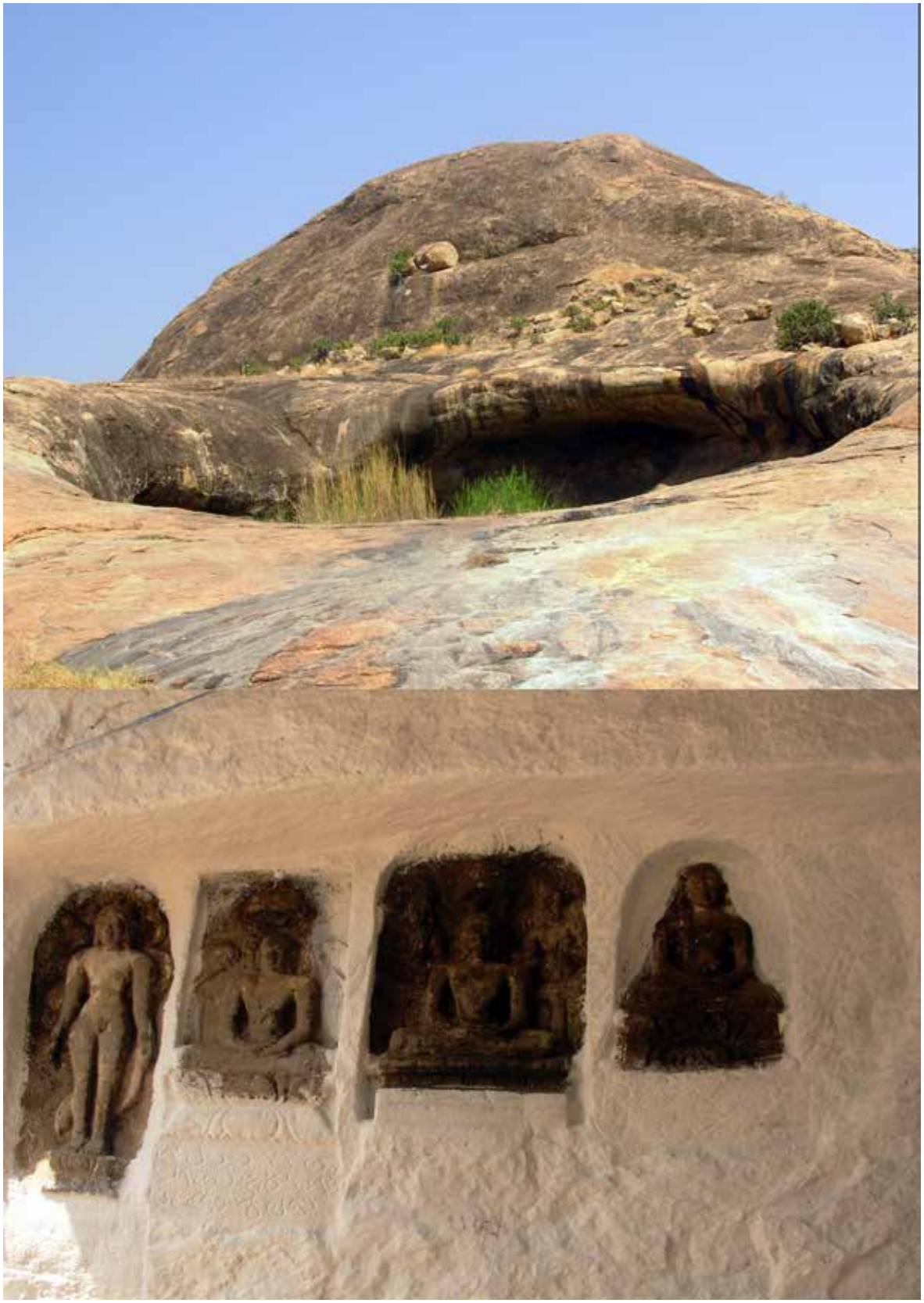


Fig. 2.89. Aivarmalai: Jain vestiges

Historical Geography of Early Historic Times

Historically, the village Porunthal was part of the territorial division known as *Vaikāvūr-nāḍu*, named after the main village Vaikāvūr or Āviyūr (*ARE* 1905/717). Other names mentioned about these territorial divisions were Āvi-nāḍu, Vaikāvi-nāḍu, Vaiyāvi-nāḍu and *Vaiyāpuri-nāḍu*, all denoting the same region. This village is considered part of the present pilgrimage town of Palani (the ancient Pothini). The famous Jain centre *Aivarmalai* (a corrupt form of *Ayiraimalai*) lies about 15 km northwest of this site (Fig. 2.89). The Sangam literature *Patiṟṟupattu* (21, 70, 79) mentioned this place as Ayirai, an abode of the Cheras family deity Goddess Korravai. More than 200 Iron Age graves, Early Historic Jain beds and sixteen Jain *Tīrthaṅkaras* in bas-relief with *vaṭṭeḻuttu* inscriptions issued during the 8th regnal year of Pandya king Varaguna II (*Saka* 870 CE) are found on eastern side of the hillock (*ARE* 691-703/1905; *ARE* 705/1905; *SII* XIV:22, 107-119; *EI* XXXII:41, pp. 237-238; Raju 2005:82-85). Thus, this is one of the important Jain centres of the Amaravathi river valley, located on the ancient trade route that connects the Pandya country with the Chera country through the Palghat gap. The Iron Age and Early Historic vestiges, Roman coin hoards, graffiti marks, brick structures, medieval trade guild inscriptions, etc., located in and around Porunthal, clearly point to the potentiality of the site.

Porunthal and its archaeological settings

The Sangam poet *Porunthil Iḷaṅkīraṉār* is considered the native of this village. He composed three songs, two in *Akanāṉūṟu* (19, 351) and one in *Puṟanāṉūṟu* (53). In *Puṟanāṉūṟu,* he composed a poem in praise of Chera king Mantharal Cheral Irumporai, who ruled from the Chera country with its capital at Karur. A fragmentary inscription datable to the 12th century CE, probably issued during the reign of Rajaraja-II, noticed on a broken slab, placed as a part of the door-jam of the Marutha-kali-ammaṉ temple found near the habitation mound, refers to this village as Porunthal, *alias Rajarajapuram* of *Vaikavur-nadu*, a territorial division of Kongu country.

All archaeological vestiges such as habitation mounds, Iron Age burials, historical temples and inscriptions are found on the left bank of the river about a km north of the village. The habitation mound covering an area of about five hectares of elevated field locally called *pāci-mēḍu,* meaning bead mound (*pāci*> bead; *mēḍu*>mound), lies between Marutha-kali-ammaṉ-koyil and the village. In support of this name, innumerable beads and bangles made of glass were collected on the surface. The site might have survived as a glass bead manufacturing centre for a longer period as attested by the occurrence of fragments of tuyeres, slags and furnace materials. An Iron Age graveyard, consisting of stone circles

entombing cist/urn burial numbering around 50, is noticed at the foothill near the present hamlets Chinngandhipuram, Kavalapatti and Puliyamarattusettu. Dolmen sites were located at Periyaduraikombai and Salpulpar̲ai.

Porunthal Excavations

The habitation mound (*pāci-mēḍu*) located about 500 m north of the village was taken up for excavations in the year 2009 (Rajan 2014; Rajan 2014:62-85). The graveyard (*pāṇḍiyan̲-kāḍu*) consists of more than 60 circles noticed 2.5 km west of the habitation mound at the foothill of *Taṉṉāsiyappaṉmalai* on Neikarapatti-Chinnagandhipuram road, which was taken-up for excavations in the years 2009 and 2010. In total, four graves (one grave [Meg-I] in 2009 and three graves [Meg-II, III and IV] in 2010) were opened for investigation.

Habitation cuttings

The habitation mound covering an area of 5.5 hectares lies on the left bank of the river Porunthilaru. In total, three trenches (A1, B1 and XN7) were laid, one on the southern part of the mound and the remaining two at the central part. The two trenches (A1 and B1) were laid adjacent to each other in an east-west orientation, covering an area of 50 sq m. Several antiquities such as glass beads, glass bangles, pendents, copper bell, terracotta ear lobes, hopscotch, terracotta weights, gamesmen, stopper, spouts, glass slag, bones, brick pieces, stone pebbles, gold pendent, ivory weight, etc., were recovered.

Glass Furnace

The trench yielded a glass-working furnace almost at the centre of the floor. Nearly 60 glass beads were recovered from the furnace alone. In association with these furnaces, several identical redware bowls with wide mouths and narrow bottoms were noticed. These bowls were placed around the furnace. As per the *drawn* methods, the beads are cut from tubes that have been pulled or drawn out from a hollow gathering of glass. *Drawn* glass tubes were cut to regular sizes. These beads with sharp cutting edges need to be blunted and rounded off to produce a smooth surface. These beads were placed inside a bowl filled with sand and heated. The heat might have facilitated the rounding off of the edges of glass beads or helped to remove the impurities attached to the surface of the glass beads. Several triangular terracotta pieces were recovered in association with these bowls. These terracotta pieces might have been used to polish the glass surface or remove encrustation. The sides of the triangular cakes were smoothened probably due to continuous rubbing. Close to this furnace, pits with ashy material were encountered along with such broken bowls and glass beads. The

Fig. 2.90. Porunthal: Glass polishing furnace

furnace and its associated materials, like red ware bowls and triangular cakes, suggest that glass beads might have been re-worked at this place rather than being manufactured. The manufacture of beads might have taken place on some other part of this mound, probably on the riverbank. The fragmentary portion of the furnace, tuyeres, slag and waste material found on the southeastern part of the mound close to the river bank probably would have served as a glass manufacturing centre. The non-availability of glass slag, raw material for producing beads, tuyeres and waste material points to the fact that this furnace might have been restricted to the use of polishing/reworking the glass beads (Fig. 2.90).

In total, 2441 antiquities were recovered from the limited area of digging. The important antiquities recovered from these trenches were beads made of glass, paste, quartz, shell, garnet and terracotta. Bangle pieces came from both glass and shell. The terracotta objects like ear lobes, earrings, studs, gamesmen, hooks, hopscotches, spindle whorls, balls, stoppers and cartwheels are some of the interesting objects recovered from these cuttings (Fig. 2.91). In the case of metal objects iron arrowheads, knives and nails were collected sparingly. Likewise, a copper ring and a bell were also collected. Two pendants, one made of gold and another of glass, were also unearthed. Among the weights (presumably) made of quartz and ivory were noteworthy. The other important findings that need close attention were the terracotta human and animal figurine and a copper coin. The main shapes of the glass beads were circular, tubular, barrel, bi-conical and collar beads. Among the shapes, the circular one predominates.

Besides the above two trenches laid on the central part of the mound, one more trench (Trench XN7) was laid on the southern part of the habitation mound. A brick structure raised over a base made of a 20 cm thick clay foundation was found. The bricks were laid using the *English bond* method. The size of the brick is 7x21x42 cm and 8x24x48 cm in the ratio of 1:3:6 cm. The stretcher and header method was adapted alternatively. On the floor, beads of quartz, paste and glass, terracotta ear lobes, balls and a miniature pot were recovered from the floor. The occurrence of a large number of glass beads, the chemical composition of glass beads and the presence of a glass re-working furnace in association with identical bowls and triangular cakes suggest that the Porunthal site served as one of the glass production centres of Tamil Nadu during Early Historic times.

Excavation of Graves

The graves, consisting of more than 60 circles, are located 2.5 km west of the habitation mound at the foothill of *Tannasiyappanmalai.* In total, four graves (one in 2009 and the remaining three in 2010) were opened. Among the four, two are transepted cists placed at

Fig. 2.91. Porunthal: Antiquities from habitation cuttings

Fig. 2.92. Porunthal: Excavated graves MEG-I and MEG-II

the centre of the stone circle. The remaining two are double cists. Both the varieties had a passage on the east. The rectangular transepted cist (Meg. I and Meg. II) had two chambers on its northern and southern sides (Fig. 2.92). The southern chamber is further divided into two or three compartments. These compartments, covering almost half the height of the southern chamber, were closed with another horizontal slab serving as a bench. Both chambers were connected by a trapeze or round-shaped porthole. The grave goods were placed in the northern and southern chambers and the passage. Besides, grave goods are also noticed outside the chamber but mostly within the circle. The first level of grave goods is noticed on the floor slab and the second level of grave goods is noticed at the porthole level. In the case of the northern chamber, almost all the grave goods, except a pot, were placed at the floor level. In the case of the southern chamber, the grave goods were placed at the floor level but in a limited quantity. In the northern chamber, several pots, four-legged jars, plates, ring stands, bowls, miniature bowls, stirrups, beads, arrowheads, skeletal remains, swords, pots and knives were placed on the floor slab (Fig. 2.93). Some of the pots had identical graffiti marks. The bones collected from elsewhere are placed in the disarticulated form at the central part of the chamber. An interesting piece of evidence is the ring stand engraved with Tamil-Brahmi script reading *va-y-ra,* noticed in Meg. I (Fig. 2.94). This script is found in association with a graffiti mark. Around this ring stand, 22 etched carnelian beads were placed. Further, four more etched carnelian beads, a small sword and an arrowhead were placed inside the ring stand. The Tamil-Brahmi script, graffiti marks, carnelian beads, an iron sword and an arrowhead found in association with the ringstand clearly point to the importance given by them. Two long iron swords with a bunch of arrowheads close to their tip portion are observed besides three sets of iron stirrups. Interestingly, in one of the four-legged jars placed at the central part of the northern chamber of Meg. II had paintings executed both in white and black pigments on the shoulder and body portion of the four-legged jars. The V-shaped design in black pigment with white dots was executed at the shoulder just below the grooving. There are seven dots in each V-design portion. Below this, an identical V-design was executed in white pigment with black dots. Below this *mala*-like design, a row of a horse (?) in black pigment was executed. Below the horse, another row of peacocks was executed using both black and white pigments. Below this row, a leaf design was shown. The edges and the midrib were painted with black pigment, whereas the other ribs were executed with white pigments.

The remaining two graves were double cist (Meg.III and Meg. IV) with an independent passage on the east connected through the porthole. Each chamber had two urns placed along with usual grave goods like a stirrup, arrowheads, swords, daggers, four-legged jars, bowls, conical vases, pots, ring stands, plates and basins (Fig. 2.95). Several of the pots had graffiti marks on the exterior surface. In total, four urns are noticed in each grave. Generally, the

Fig. 2.93. Porunthal: Excavated graves MEG-III and MEG-IV

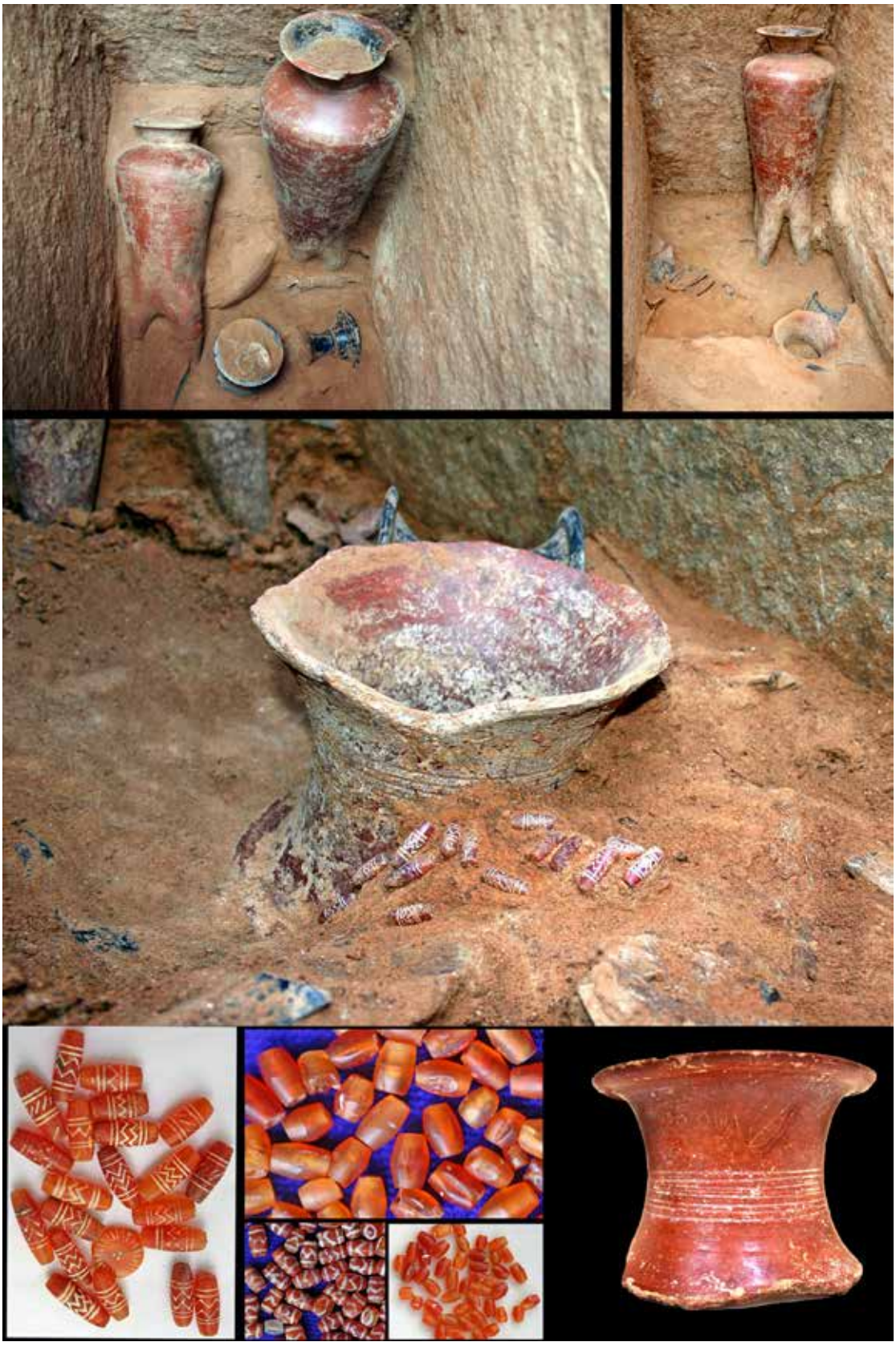


Fig. 2.94. Porunthal: Grave goods placed in MEG-I

Fig. 2.95. Porunthal: Pots from graves

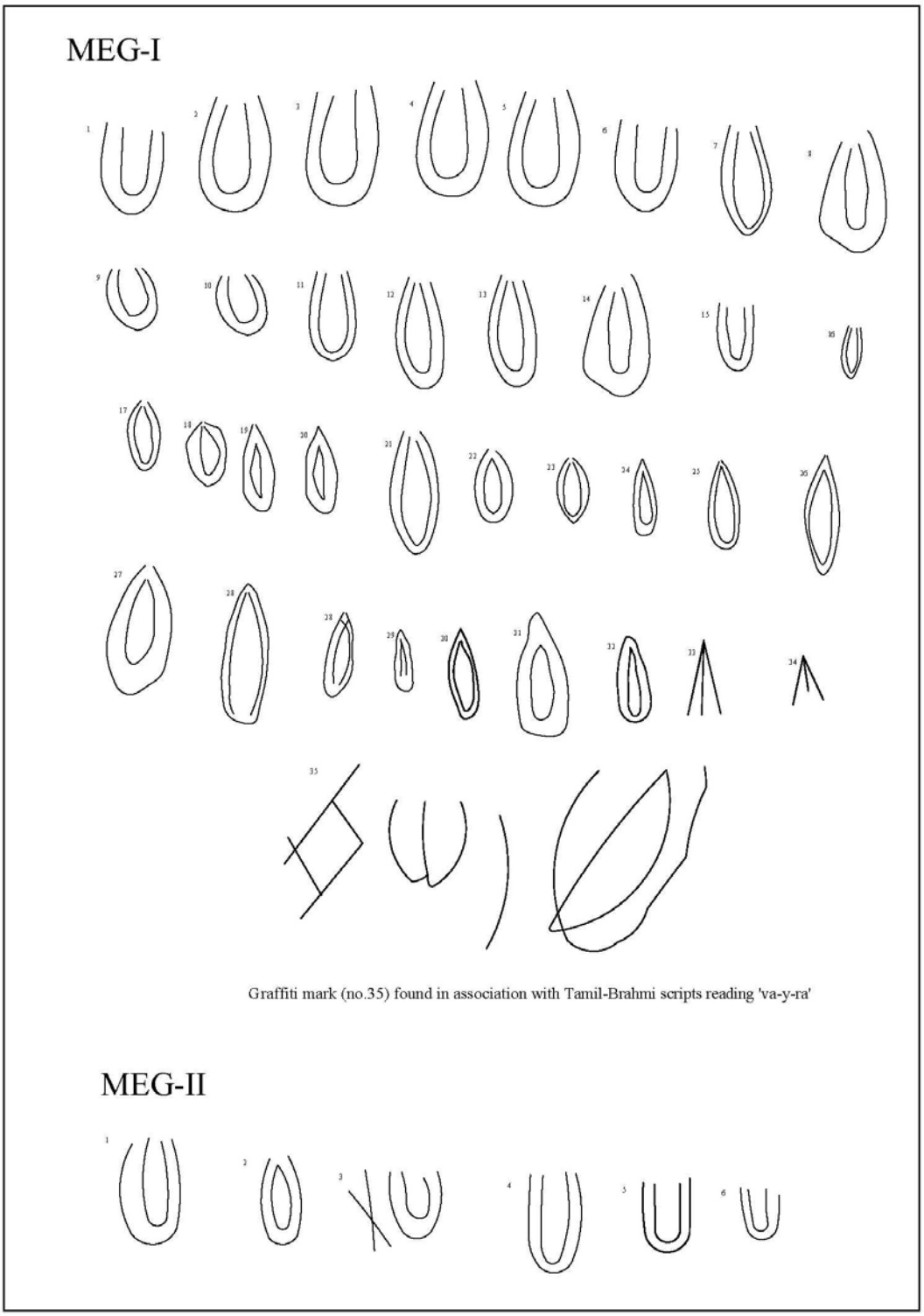


Fig. 2.96. Porunthal: Graffiti marks from the graves MEG-I and MEG-II

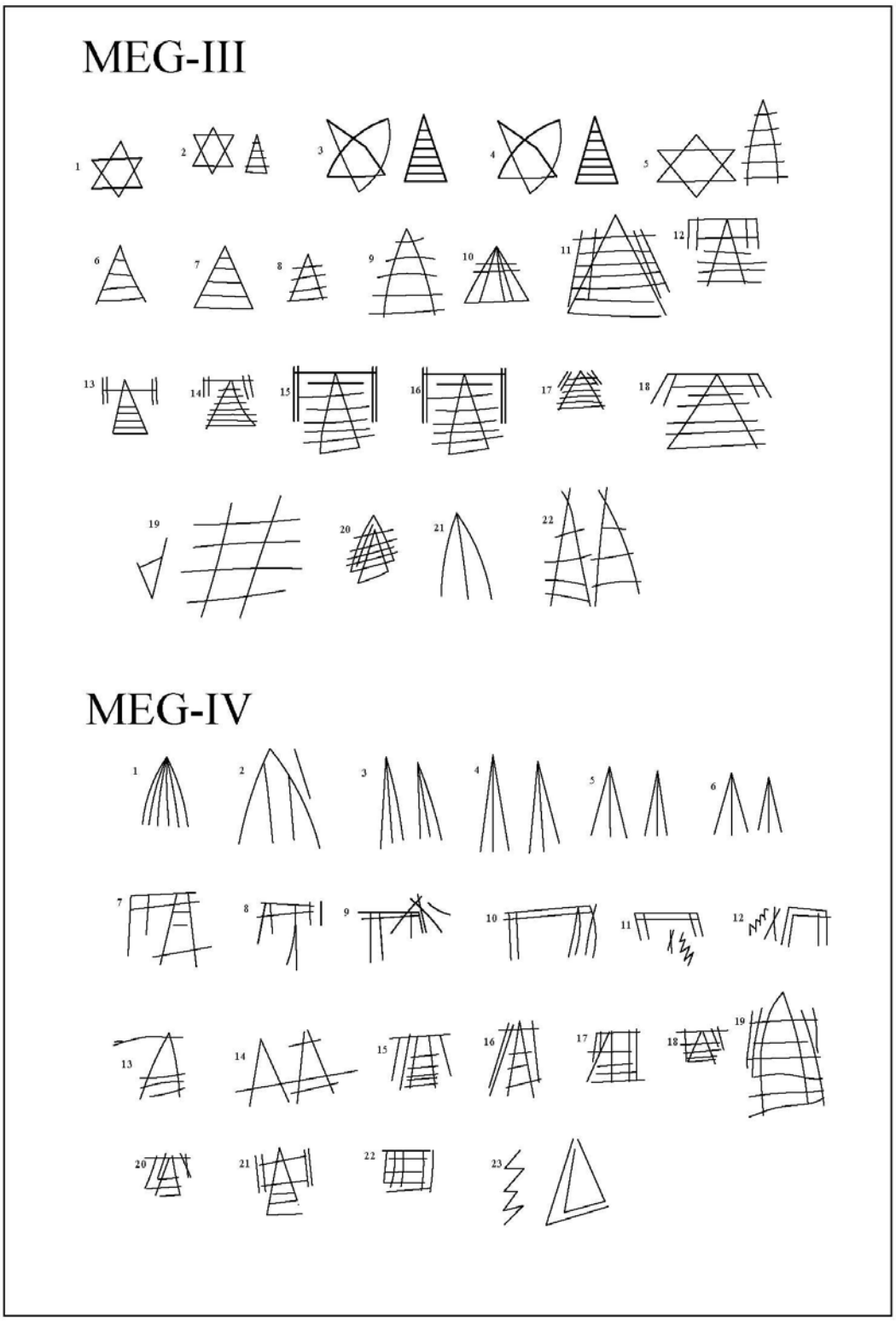


Fig. 2.97. Porunthal: Graffiti marks from the graves MEG-III and MEG-IV

Burial No.	Description	Sign
MEG. I	Eight oblique lines meeting at the top. A wavy line superimposed over the second and third extreme left oblique lines	
MEG. II	A pair of three-pronged forks touching each other with a wavy line superimposed over the extreme oblique of the second sign. A variant of the sign 3.0	
MEG. III MEG. VII MEG. VIII MEG. X MEG. XII MEG. XIII MEG. XV MEG. XVI	Four vertical lines hanging from a horizontal line. A variant of the sign 10.1	
MEG. V MEG. IX MEG. XIV	A fork like sign. Two oblique lines meeting a central vertical line at the top, somewhat like a three-pronged fork with wavy lines superimposed over both the oblique lines. A variant of the sign 2.10	
MEG. VII	Four vertical lines hanging from a horizontal line	
MEG. XIV	There are two signs. The first sign is a fork like sign. Two oblique lines meeting a central vertical line at the top, somewhat like a three-pronged fork with wavy lines superimposed over the right oblique line. A variant of the sign 2.8. The second is a fork like sign. Two oblique lines meeting a central vertical line at the top, somewhat like a three-pronged fork with wavy lines superimposed over both the oblique lines. A variant of the sign 2.10	
MEG. XV	There are two signs. The first sign is a four vertical lines hanging from a horizontal line. A variant of the sign 10.1. The second is a two oblique lines placed on either side meeting at the centre of the vertical line. A horizontal line placed at the meeting point. A oblique line meets the tip of the vertical line and left end of the horizontal line	
MEG. IV MEG. VI MEG. XI MEG. XVII	Graffiti marks could not be recognised	

Kodumanal: Burial Graffiti Signs

Fig. 2.98. Kodumanal: Graffiti marks from various graves

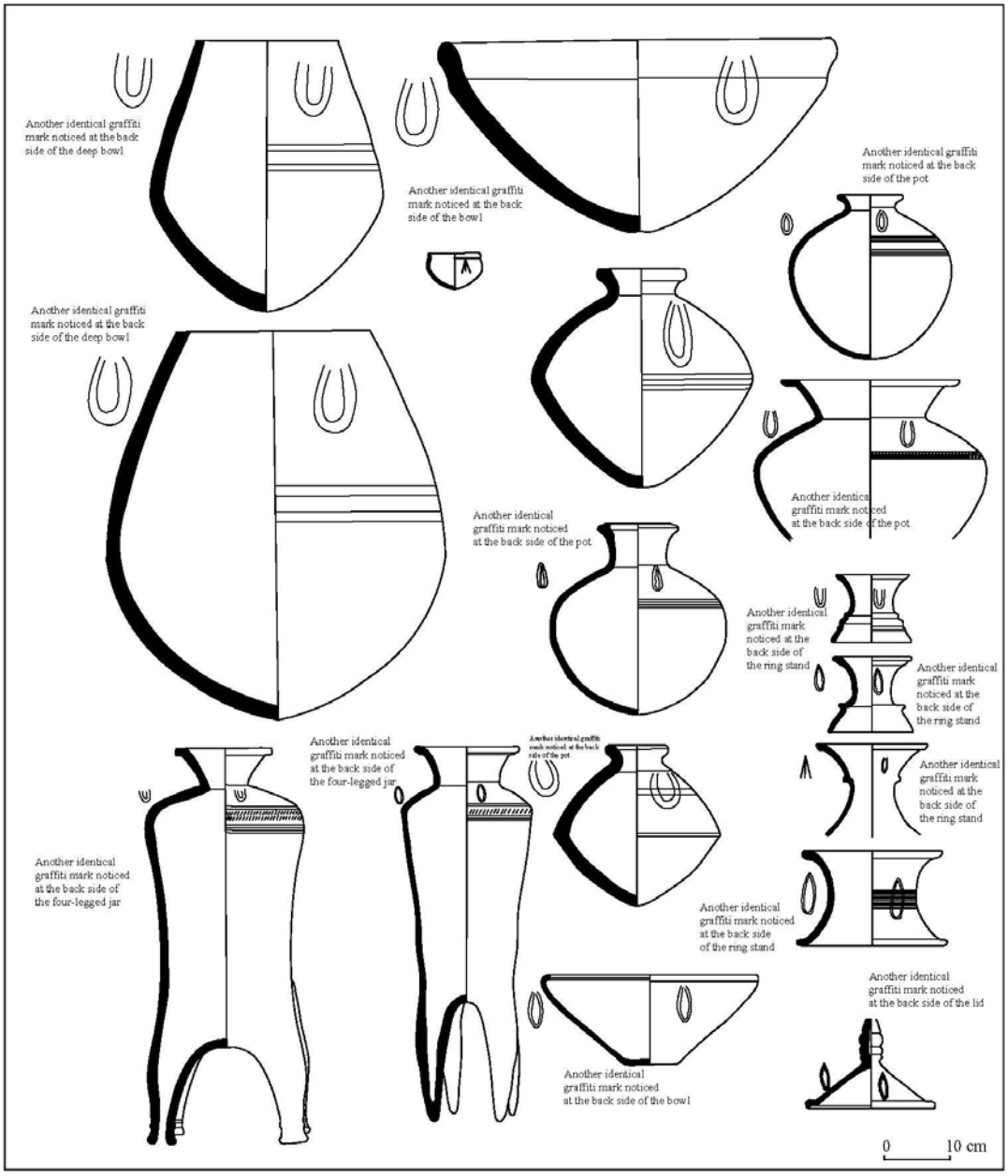


Fig. 2.99. Porunthal: Graffiti marks engraved on the pots recovered from MEG-I

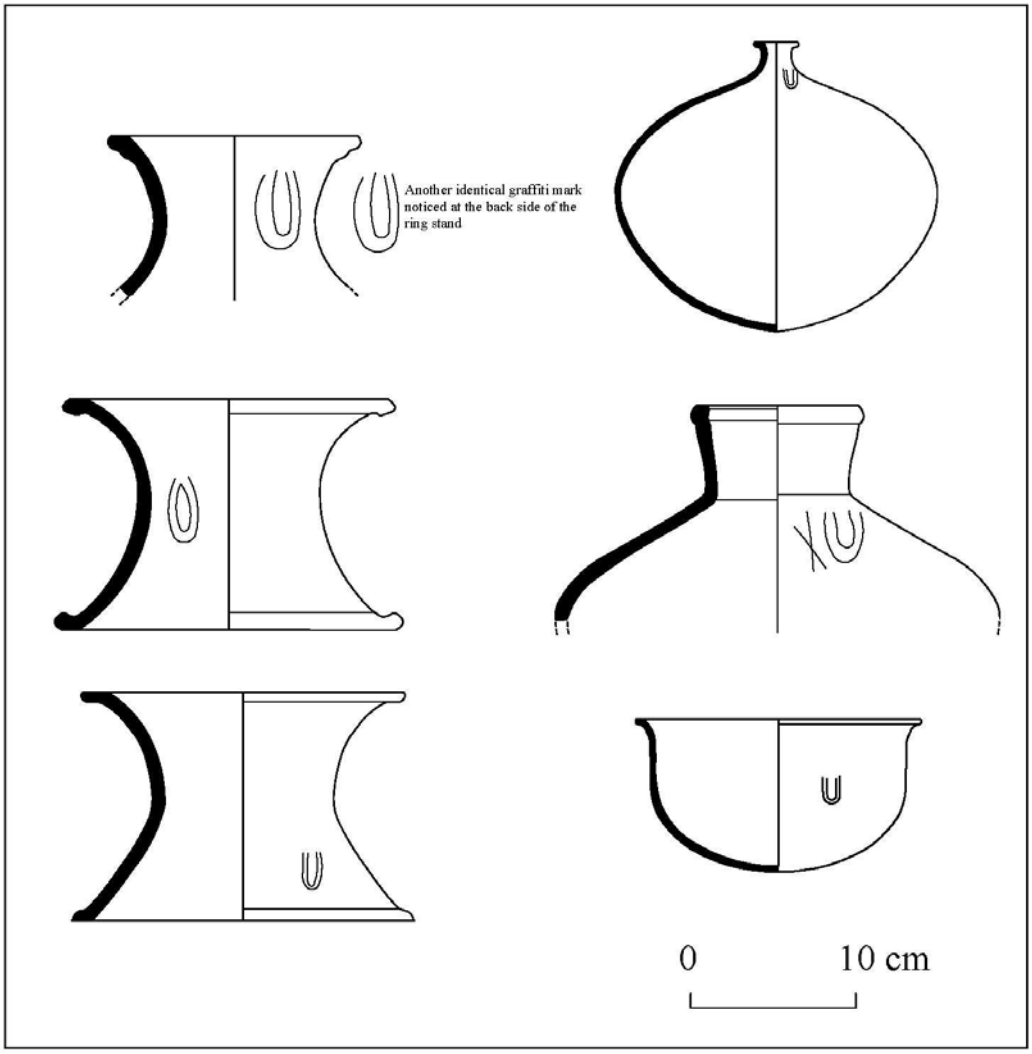


Fig. 2.100. Porunthal: Graffiti marks engraved on the pots recovered from MEG-II

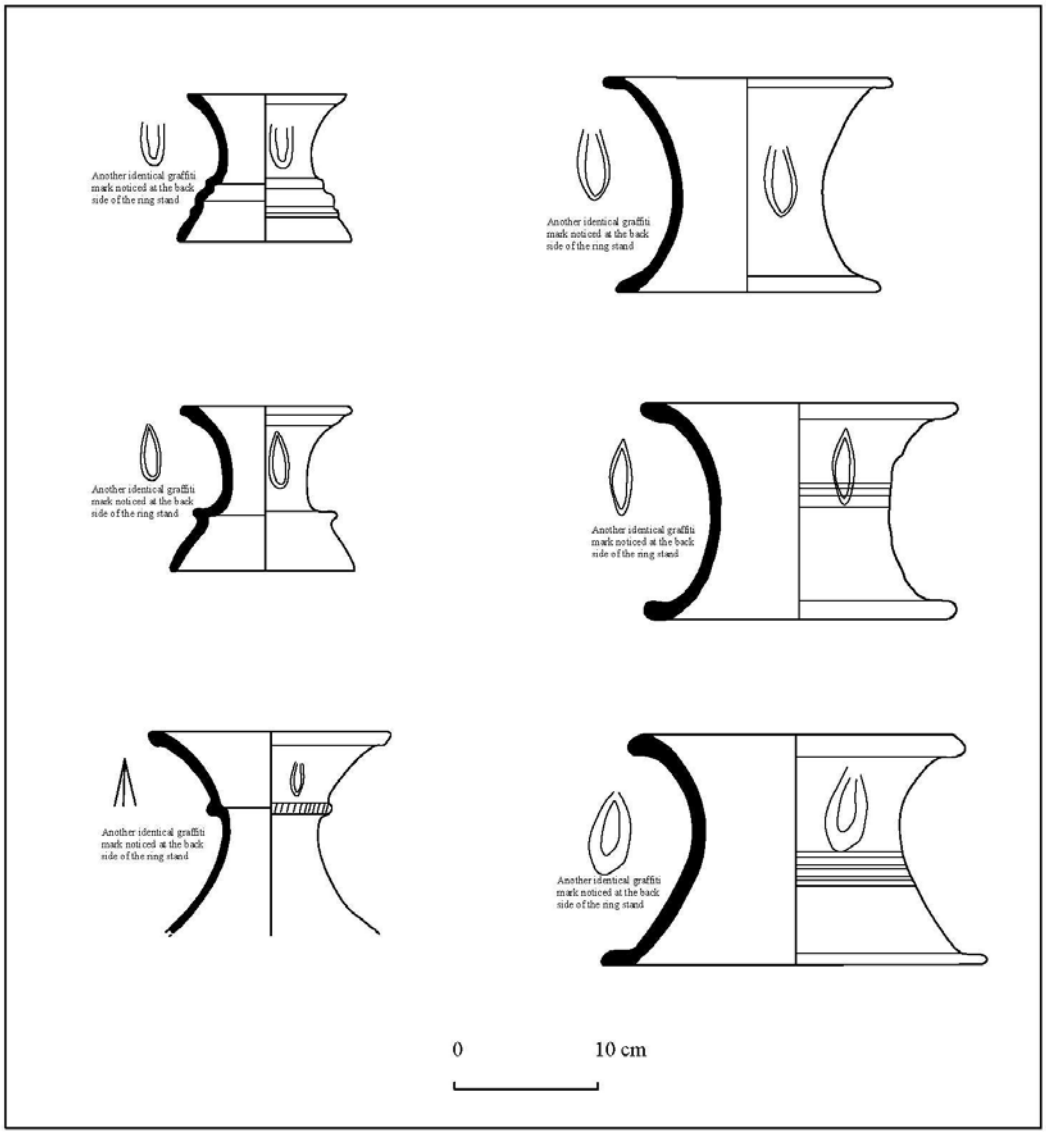

Another identical graffiti mark noticed at the back side of the ring stand
Another identical graffiti mark noticed at the back side of the ring stand
Another identical graffiti mark noticed at the back side of the ring stand
Another identical graffiti mark noticed at the back side of the ring stand
Another identical graffiti mark noticed at the back side of the ring stand
Another identical graffiti mark noticed at the back side of the ring stand
0
10 cm

Fig. 2.101. Porunthal: Graffiti marks engraved on the pots recovered from MEG-I

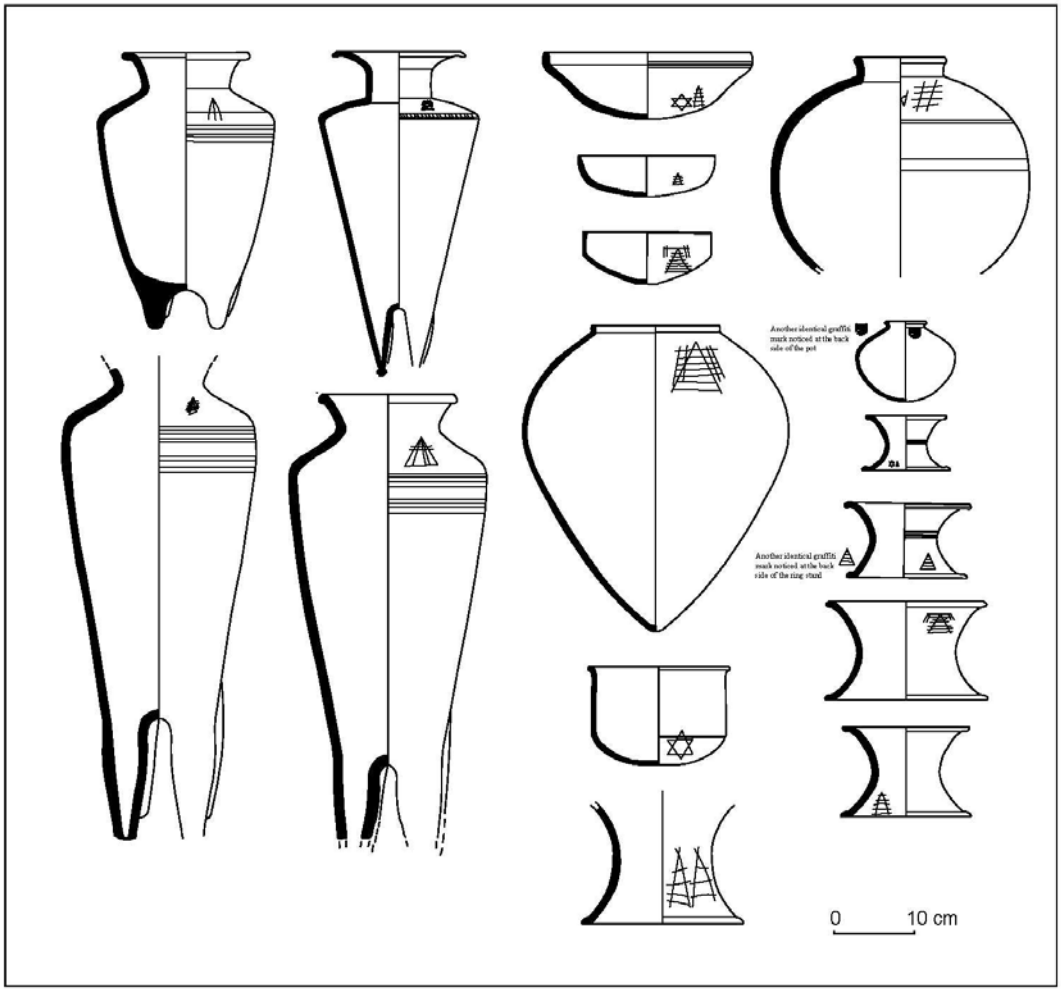

Another identical graffiti mark noticed at the back side of the pot
Another identical graffiti mark noticed at the back side of the ring stand
0
10 cm

Fig. 2.102. Porunthal: Graffiti marks engraved on the pots recovered from MEG-III

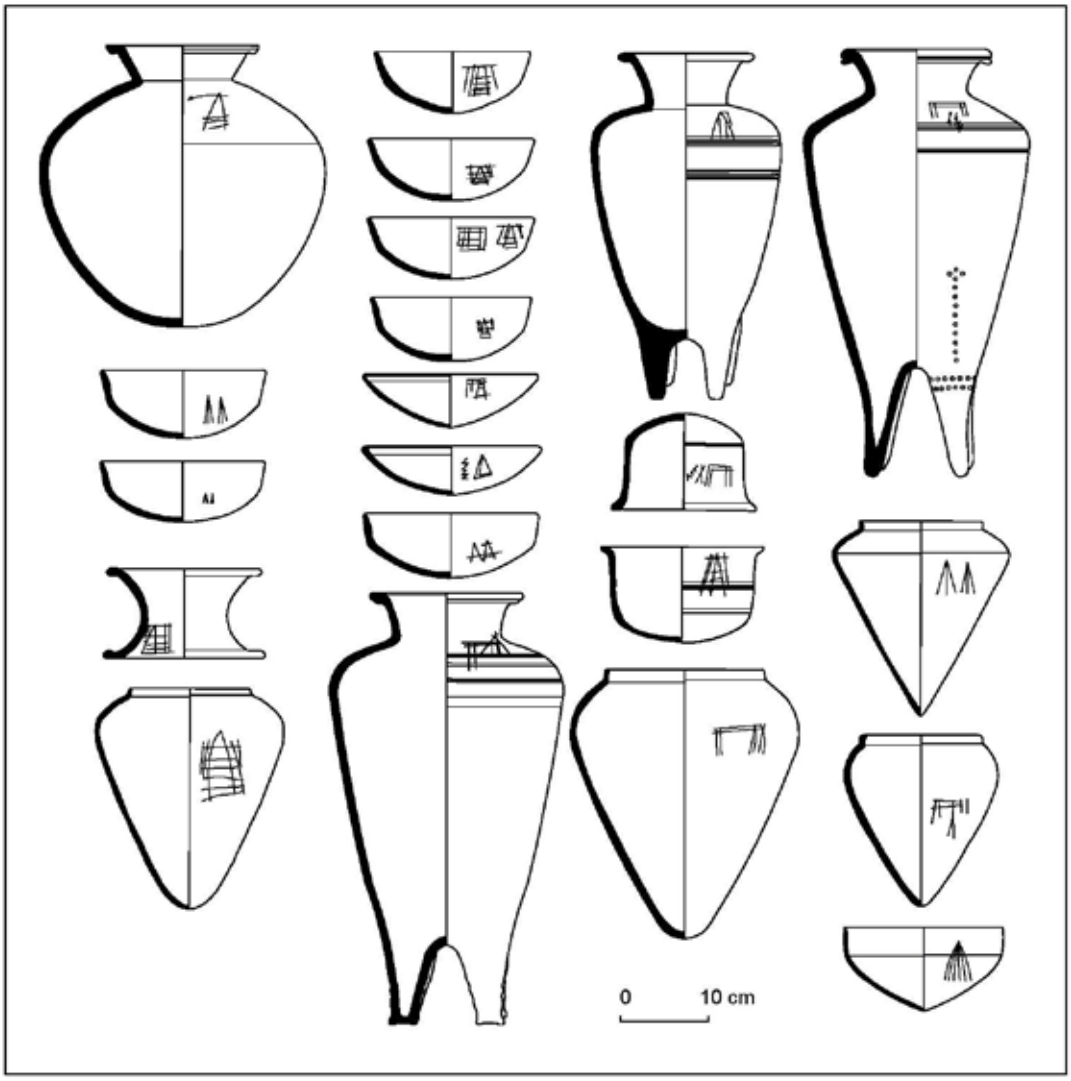


Fig. 2.103. Porunthal: Graffiti marks engraved on the pots recovered from MEG-IV

westernmost urn placed in both the cists had important antiquities along with skeletal remains. Several beads of carnelian, steatite, glass, quartz and agate were collected. Another important discovery is the presence of paddy kept in a four-legged jar, noticed in all the graves.

Graffiti marks

Porunthal graves met with several graffiti marks (Figs. 2.96-103). The double-line U-shaped symbol is found in both MEG-I and MEG-II. Interestingly, both graves are structurally identical and are located close to each other. These two graves are a transepted variety with a passage on the east against the northern chamber of the transepted cist. The cultural deposit and the rituals performed are also similar in nature. Thus, these graves must have been raised for somewhat related social groups, probably a clan. In association with this symbol, a three-pronged fork meeting at the top is also found in one or two pots in MEG-I. The reason/logic behind this could not be discerned at this moment. Likewise, MEG-II also had an X-shaped symbol before the usual double-line U-shaped symbol in one of the pots. The grave MEG-III met with three basic symbols and their variants. The first is a star symbol. The second one is a two-pronged fork meeting at the top and is filled with horizontal strokes. The third one is identical to the second symbol, but with an additional horizontal line hanging with two parallel vertical strokes on its two extreme ends, placed on the top of the symbol. These symbols are found individually or in combinations of two symbols. Besides, MEG.III yielded a solitary V-shaped symbol followed by a ladder.

The grave MEG-IV met with four or five basic symbols and their variants. The first is a two/three-pronged fork meeting at the top. The second one is a two-pronged fork meeting at the top and is filled with horizontal strokes, but with an additional horizontal line hanging with two parallel vertical strokes on its two extreme ends. The third one is two parallel horizontal strokes hanging with two parallel vertical strokes on its two extreme ends. The fourth one is an X-shaped symbol. The fifth one is a wavy line symbol placed in a slanting position. These symbols are found individually or in combinations of two symbols.

The symbol consists of the two-pronged fork meeting at the top and is filled with horizontal strokes, but with an additional horizontal line hanging with two parallel vertical strokes on its two extreme ends, which is common for both graves. Both the graves were met with double cists, each cist interned with two urns. Both the graves are structurally similar, and the rituals performed in the graves are identical. Therefore, the symbol found in both graves carries a specific meaning.

Graffiti and Tamil

The graffiti marks recovered from all four graves had a specific pattern. Such a situation was also witnessed earlier at Kodumanal. The lack of intensive excavation and proper documentation of such sites in South India prevents us from arriving at a definite conclusion. However, a small attempt is made to expose the significance of these graffiti marks. To understand the true meaning that stands behind these signs and the proper linkage between the scripts and the graffiti marks requires extensive exploration and excavation. Therefore, the identification of symbols lies in the future documentation of the graffiti marks that were scattered in different geographical zones.

Antiquities

The antiquities are quite varied and fairly representative of almost all conceivable materials of the day. Both the habitation cuttings and the graves yielded antiquities of equal interest. The antiquities from the graves were comparatively richer in certain respects as they were objects of offerings meant for the use of the departed souls in their afterlife, whereas those from the habitation were mostly used and discarded things.

Glass beads are the largest number of objects collected from habitation, constituting nearly 86%. The remaining antiquities like bone tools, chowrie beads, copper objects like coins, bells and rings; beads of garnet and quartz; gold pendent; iron objects like arrowheads, nails and knife; terracotta objects like beads, ear lobes, studs, spindle whorls, bull and human figurines; ivory weight and dice constitute remaining 14% and each object not exceeding 2%. Shell (chank) was a popular material for making bangles and, to some extent, beads. Some are plain without decoration. The shells must have been brought from the seashore, preferably from the east coast. Other than pottery, terracotta has produced some beads, ear lobes, studs, rings, torsos, human figurines, bull and gamesmen.

An appreciable number of iron objects are recovered from the graves, and a few objects from habitation. These consist of both weapons and tools. In the habitation, iron objects are limited to domestic tools like knives and nails. The cylindrical or barrel-shaped iron beads found in late levels were made by a moulding process. In the graves, along with a large number of arrowheads, some big swords and daggers were also found. Compared to iron, copper objects were found in a meagre quantity and were confined to ornamental pieces. Two fine earrings made of copper spiral with a hook attachment were also found. A small copper bell and a gold pendant are the only objects worth mentioning.

Beads of carnelian, quartz and steatite are found in large numbers. The occurrence of a considerable number of beads in Iron Age megalithic graves of Tamil Nadu and Kerala is

a well-known fact, but this is the first instance where we get such a large number of beads from a single megalithic burial. Generally, carnelian beads are found in large quantities as observed at Kodumanal (Rajan 1994) and Thandikudi (Rajan and Athiyaman 2011). But in Porunthal graves, micro steatite beads outnumber all other beads. Then, beads of quartz, carnelian and bauxite come in order of quantity. For the first time, bauxite beads were reported in graves. A large number of antiquities recovered through limited excavation from both the habitation and graves suggest that the social and economic status of Porunthal inhabitants is comparatively of high.

Chronology

Of the four graves excavated at Porunthal, one grave (Meg.-I) yielded two ring stands with Tamil-Brahmi characters reading *va-ya-ra* as stated above. The ring stand with inscription is found in association with paddy grains kept in a four-legged jar. These paddy grains were examined by Dr.Premathilake, Post Graduate Institute of Archaeology, Sri Lanka and Dr.Anupama, Head, Department of Ecology, French Institute of Pondicherry and identified them as cultivated paddy (*Oryza sativa indica*). The paddy grains collected from the four-legged jars of MEG-I and MEG-IV were sent for radiometric dates, and the uncalibrated conventional dates, respectively, go back to 2440±30 BP (490 BCE) (Beta-302854) and 2400±30 BP (450 BCE) (Beta-305904). For the first time, AMS dates (Accelerator Mass Spectrometry) have been obtained for a grave in Tamil Nadu. As a result, the uncalibrated date of the Tamil-Brahmi script goes back to 490 BCE. These two dates urge us to relook at the introduction of the writing system in India.

When compared with the excavations conducted so far in Tamil Nadu, the four graves excavated out of hundreds of graves at Porunthal met with several archaeological significances, such as the discovery of the highest number of beads (8533), quartz beads (328) and steatite micro beads (7020) from a single grave that came from Porunthal. Besides, the discovery of paddy from all four graves, two inscribed ring stands with Tamil-Brahmi script datable to the 5th century BCE, and the highest number of pots placed as grave goods are some important archaeological and cultural features encountered at Porunthal.

Conclusion

The cultural material obtained from Porunthal excavations contributed much to understanding the social development that took place in this part of the country. On the political front, the region witnessed the emergence of a clan-based society as gleaned from literary, epigraphical, numismatic and archaeological sources. The analysis of graffiti marks

also supports this view. Porunthal and its surroundings were under the control of Vēḷir chieftains. One of the famous Vēḷir chieftains who ruled this region was Vēḷ-Āvi-k-kō-p-perum-pēkaṉ. On the social front, the occurrence of quite a number of glass beads, beads of semi-precious stone like agate, carnelian, quartz and steatite, gamesmen, gold and ivory objects, huge brick structures and many other cultural materials like paddy grains suggest that Porunthal inhabitants carried a comfortable social life. The occurrence of Tamil-Brahmi inscribed potsherds demonstrates their literacy level as early as the 5th century BCE. On the economic front, trade played a dominant role in the upliftment of the society. Probably the glass trade is one of the important trade items that enhanced the quality of their life. On the technological front, the occurrence of glass working furnaces, for the first time in Tamil Nadu, stands as a testimony to the technological advancement made in glass manufacturing technology. Thus, the limited excavation of four graves out of hundreds of graves and the habitation mound provided a considerable amount of data that demanded a re-look into our past.

11. Sivagalai

Sivagalai (8.6533° N; 77.9866° E), an Iron Age habitation-cum-burial site, is situated 7 km north of river Tamiraparani and about 31 km southwest of Thoothukudi town and 10 km northeast of Srivaikundam in Eral taluk of Thoothukudi district (Fig. 2.104). Tamil Nadu State Department of Archaeology undertook excavations in three seasons at eight localities in the years 2019-20, 2020-21, 2021-22, of which three are burial sites located in the villages Sivagalai, Petmanagaram and Srimoolakarai, and the remaining five localities Valappalanpillai-thiradu, Parakiramapandi-thiradu, Chekkadi-thiradu, Aavarangadu and Pottalkottai-thiradu, are habitation mounds. The five AMS and seven OSL dates of 2500-3000 BCE, 1155 BCE and 685 BCE were respectively obtained for the said three important archaeological events, namely the introduction of iron, paddy cultivation and Tamil-Brahmi script (Rajan and Sivanantham 2025; Sivanantham *et.al.,* 2022). These dates and the associated materials provide new insights into the emergence of Iron Age culture in the Tamiraparani River Valley.

Site Settings

The famous microlithic site Sayarpuram, popularly called *teri* sites, the urn burial site Adichanallur and the celebrated Early Historic Pandya port Korkai are respectively located about 15 km north, west and east of Sivagalai. The Iron Age urn burial site, locally called *parambu,* covering about 500 acres of unproductive terrain, lies in the northwestern part of the Sivagalai village (Fig. 2.105). The extent of the graveyard

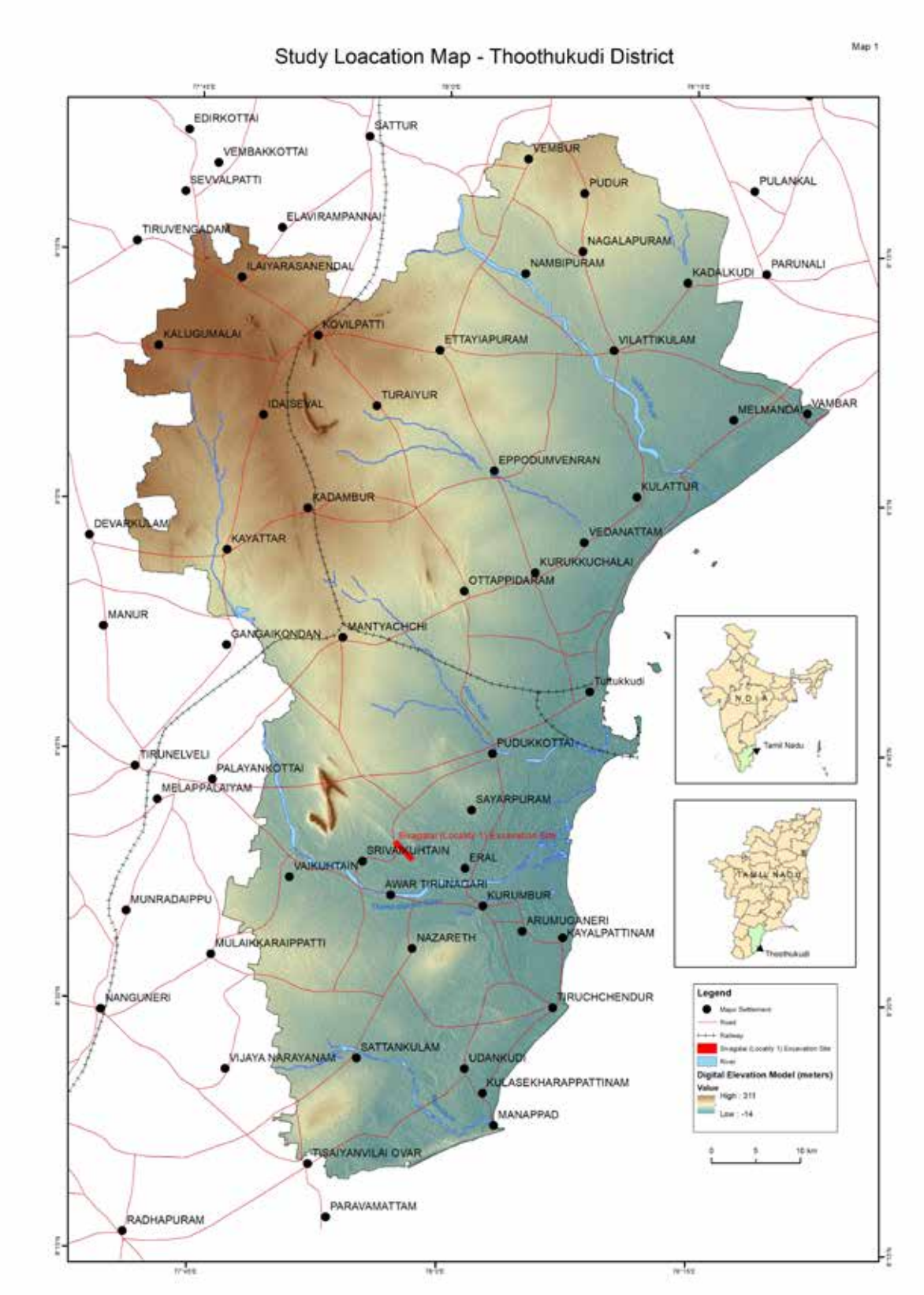


Fig. 2.104. Sivagalai: Location of the site

Map 13
Sivagalai (Locality 1) Excavation Site
3D landscape model of LIDAR based Digital Terrain Model (DTM) - with Drone Ortho Photo - South to North view
Ortho Photo
RGB
Red: Band #0
Green: Band #1
Blue: Band #2
Unsurveyed area
Map 14
Sivagalai (Locality 1) Excavation Site
Bird eye view of landscape covering with temple and paleo river channel - South to North View

Fig. 2.105. Sivagalai : Graveyard

encompasses the neighbouring villages up to Petmanagaram and Srimoolakarai. The 18th century inscription found in the graveyard called *Sivagalai-ucham-parambu* is referred to as Seivilai, probably named after the red soil. The archaeological settings of the site with numerous cultural artefacts encountered at Sayarpuram, Korkai, Kayalpattinam, Adichanallur and others from the times of the microlithic period down to the medieval period indirectly facilitated a dig at Sivagalai to understand the cultural relation between these sites, particularly with the site Adichanallur.

S.Ramachandran of the Tamil Nadu State Department of Archaeology first reported the site Sivagalai. M.Prasanna identified Petmanagaram, a part of the Sivagalai burial complex, in 2008 as part of his M.Phil programme (Prasanna 2008). V.P.Yatheeskumar revisited the site in 2018 (Yatheeskumar 2018) (Figs. 2.106 and 2.107). A.Manickam, a school teacher at Srivaikundam, took all interest in taking the archaeologists to the site and persuaded them to conduct an excavation. He also collected a high-tin bronze bowl from a disturbed urn burial (Fig. 2.108). The archaeological settings with about 35 sites in and around Sivagalai, archaeological findings such as a high-tin bronze bowl and white painted black-and-red ware from exposed urns, the size of the graveyard and the associated habitation mound reflected the rich cultural wealth of the site, prompting a scientific dig in the year 2019-20.

Sivagalai-parambu - Burial Site

The extensive graveyard falls at three localities close to the villages Sivagalai (8.6533°N; 77.9866°E), Petmanagaram (8.6586°N; 77.9530°E), and Srimoolakarai, (8.6605°N; 77.9475°E), covering an area of more than 500 acres of unproductive land. In total, 17 trenches comprising 39 quadrants were excavated at Sivagalai-parambu (Fig. 2.109), which exposed a total of 87 urns. At Petmanagaram, 3 trenches with 8 quadrants exposed with 11 urns and 4 trenches comprising 16 quadrants were excavated at Srimoolakarai with 62 urns. In total, 25 trenches and 63 quadrants were excavated, in which 160 urns were exposed. Out of 160 urns, merely 9 urns are in black-and-red ware, and the remaining 151 are of red ware.

The general soil profile of the terrain consists of yellowish compact lateritic soil at the top, laterite gravel in the middle and a quartzite bedrock at the base. The depth of the pit to accommodate the urn depends on the nature of the soil content. The maximum depth of the pit observed is 150 cm, and the average diameter of the pit is 100-110 cm (Fig. 2.110). The size of the urn varies from big to small. The maximum height of the urn is 115 cm, and the breadth is 65 cm. The maximum thickness is 4.5 cm. Most of the urns developed a crack due to the pressure of the soil and the nature of the ceramic.

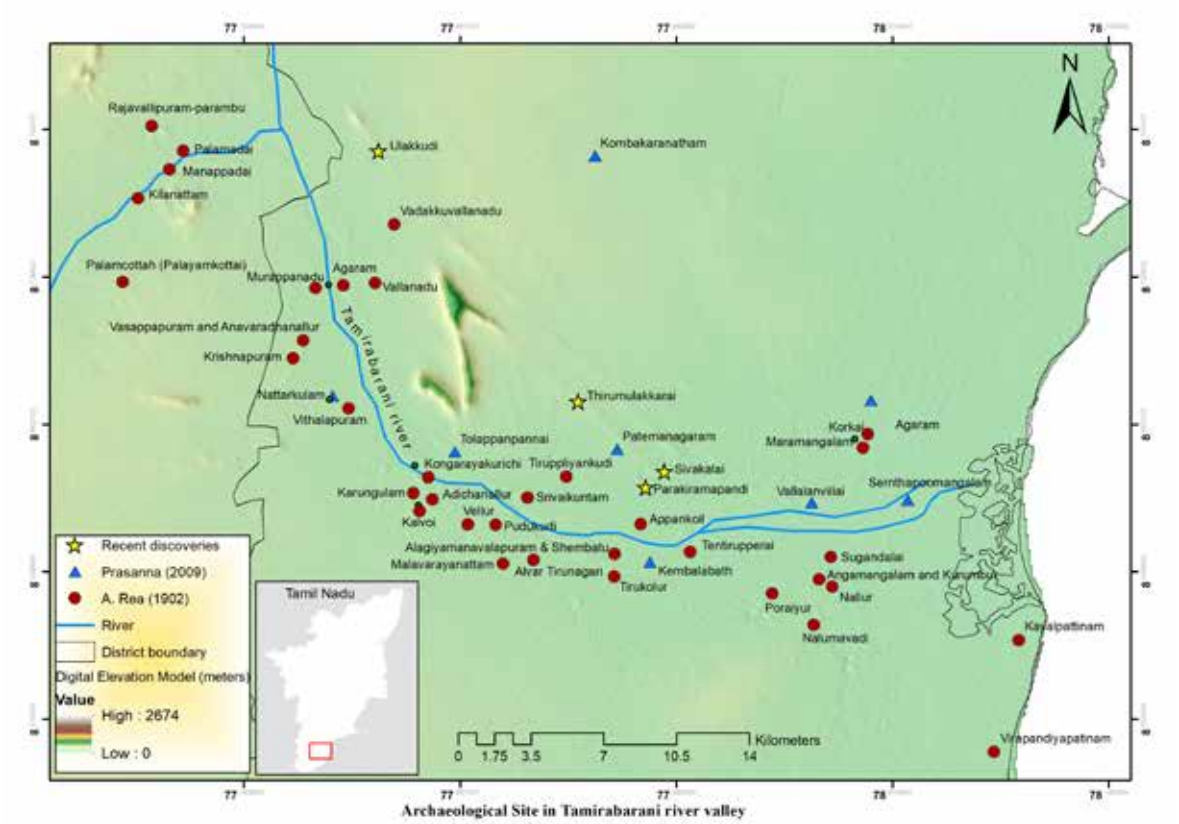


Fig. 2.106 . Previous Explorations in and around Sivagalai

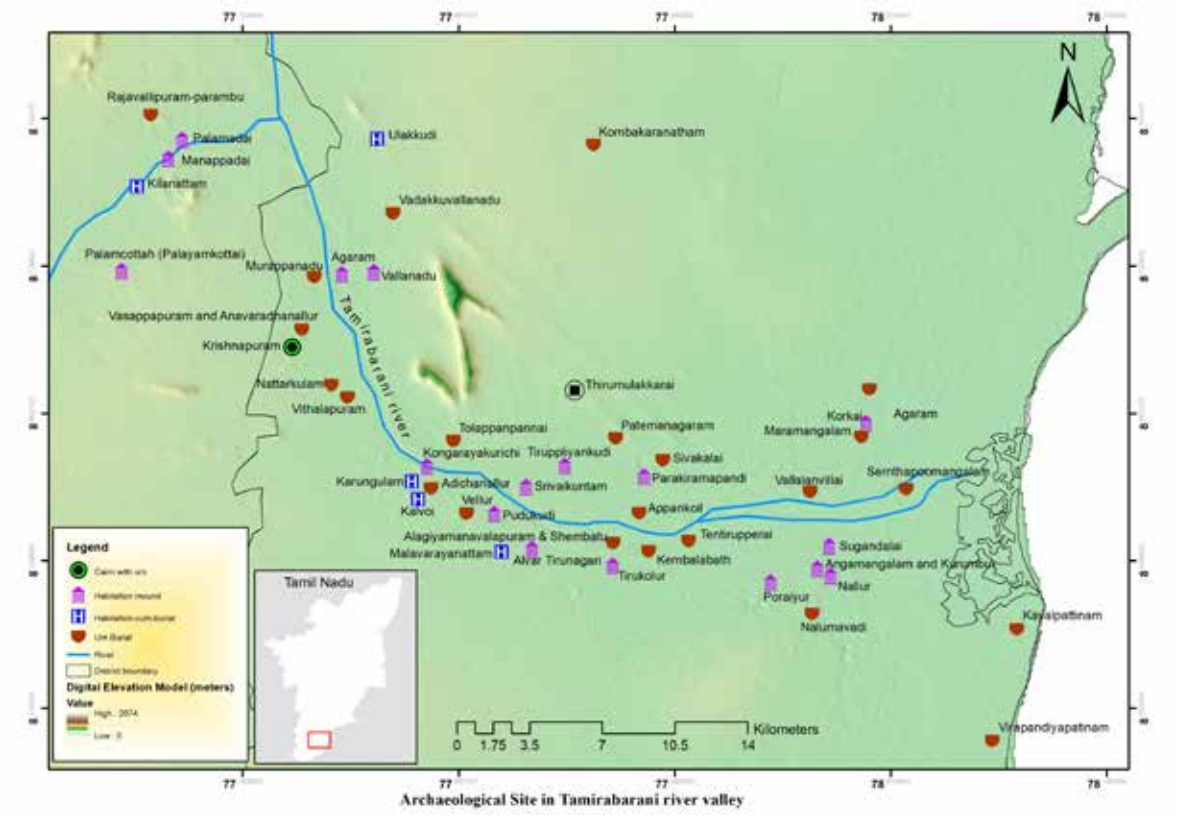


Fig. 2.107. Archaeological settings at Sivagalai

Fig. 2.108. Sivagalai: High-tin bronze bowls

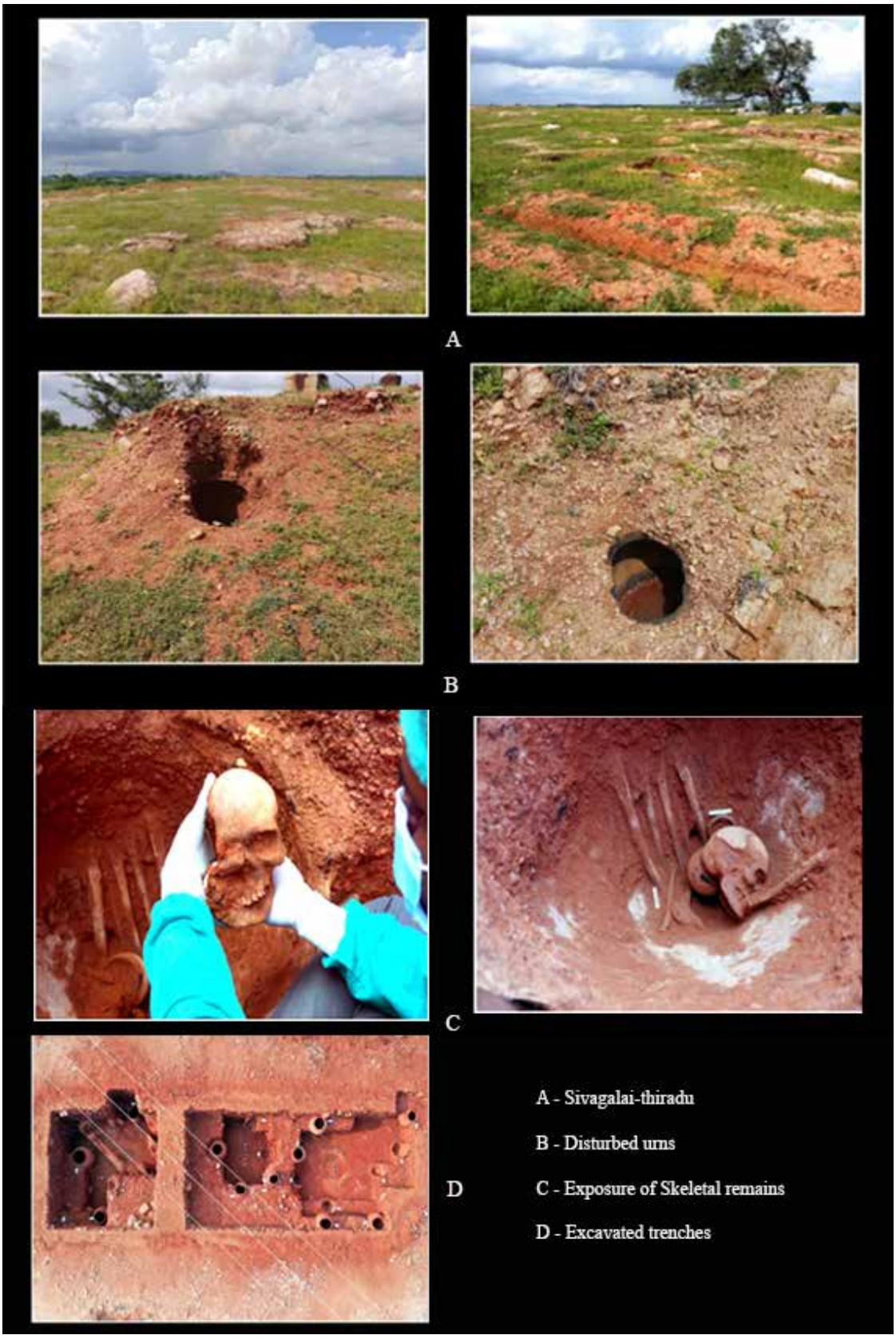


Fig. 2.109. Sivagalai-parambu: General view of the graveyard

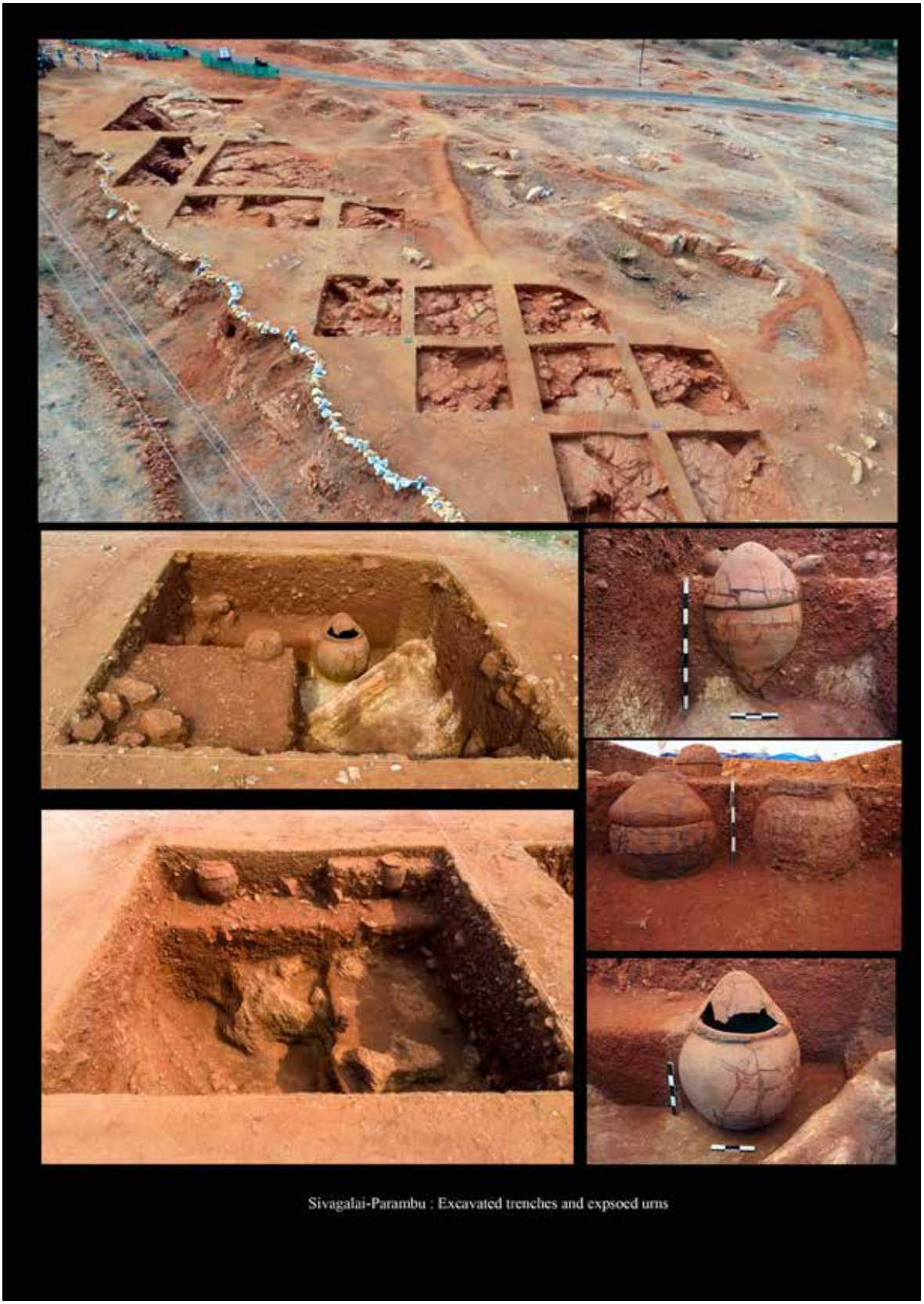


Fig. 2.110. Sivagalai: General view of the urns from the excavated trenches

Graffiti and Tamil

Petmanagaram

Petmanagaram is located 2 km north of Sivagalai-parambu. The excavation was initiated in the second season of the Sivagalai cluster in the year 2020 and exposed 11 urns. The maximum depth of the pit is 185 cm, and about 109 offering ceramics, such as pots, bowls, ring stands and lids, were collected from all the urns placed both inside and outside the urn. Two iron objects, a chisel and a sword, were collected from the urns numbered 8 and 10, respectively, and placed as grave goods inside the urn.

Srimoolakarai

Srimoolakarai is located 3 km north of Sivagalai-parambu. Four trenches were excavated, and a total of 62 urns were exposed in a disturbed condition. 219 offering pots, such as pots, bowls, ring stands and lids, were collected from all the urns placed both inside and outside the urn. Ten iron objects, such as knives, swords and chisels, were collected from the urns numbered 6, 7, 13 and 14, placed as grave goods inside the urn.

Nature of Grave Goods

The grave goods predominantly are earthen pots comprising bowls, lids, ring stands and pots of white painted black-and-red ware and black ware (Fig. 2.111). The white-painted black-and-red ware is often found in graves (Fig. 2.112), and one or two pieces are in the habitation cuttings. These paintings in white pigments are executed with patterns of dots on the neck and shoulder portions of the pots and bowls. The surface of the black-and-red ware pots is highly polished and burnished. They are manufactured with well-levigated clay without salt glazing. Urns are mostly in red ware and a few in black-and-red ware. The black-and-red ware urns are mostly thin and small in size when compared with red ware urns. The grave goods were placed both inside and outside the urns. The black-red ware vessels dominate the scene in offering pots. The black slipped ware and black ware are mostly restricted to ring stands and lids. The iron objects were found placed both inside and outside of the urn, but mostly at the bottom-most part of the urn (Fig. 2.113). More than 85 iron objects consisting of knives, arrowheads, rings, chisels, axes and swords were collected at various levels both inside and outside of the urn.

Among the excavated graves, Urn nos. 1 and 3 exposed in trench A2, Urn Nos. 5 and 8 exposed in trench L13, Urn No. 8 exposed in trench B3 and Urn No. 10 exposed in trench C3 provided some important chronological markers for iron and paddy. The excavations carried out in quadrants II-III of trench A2 met with yellowish compact sandy soil in the first layer,

Fig. 2.111. Sivagalai-parambu: Various types of pots from graves

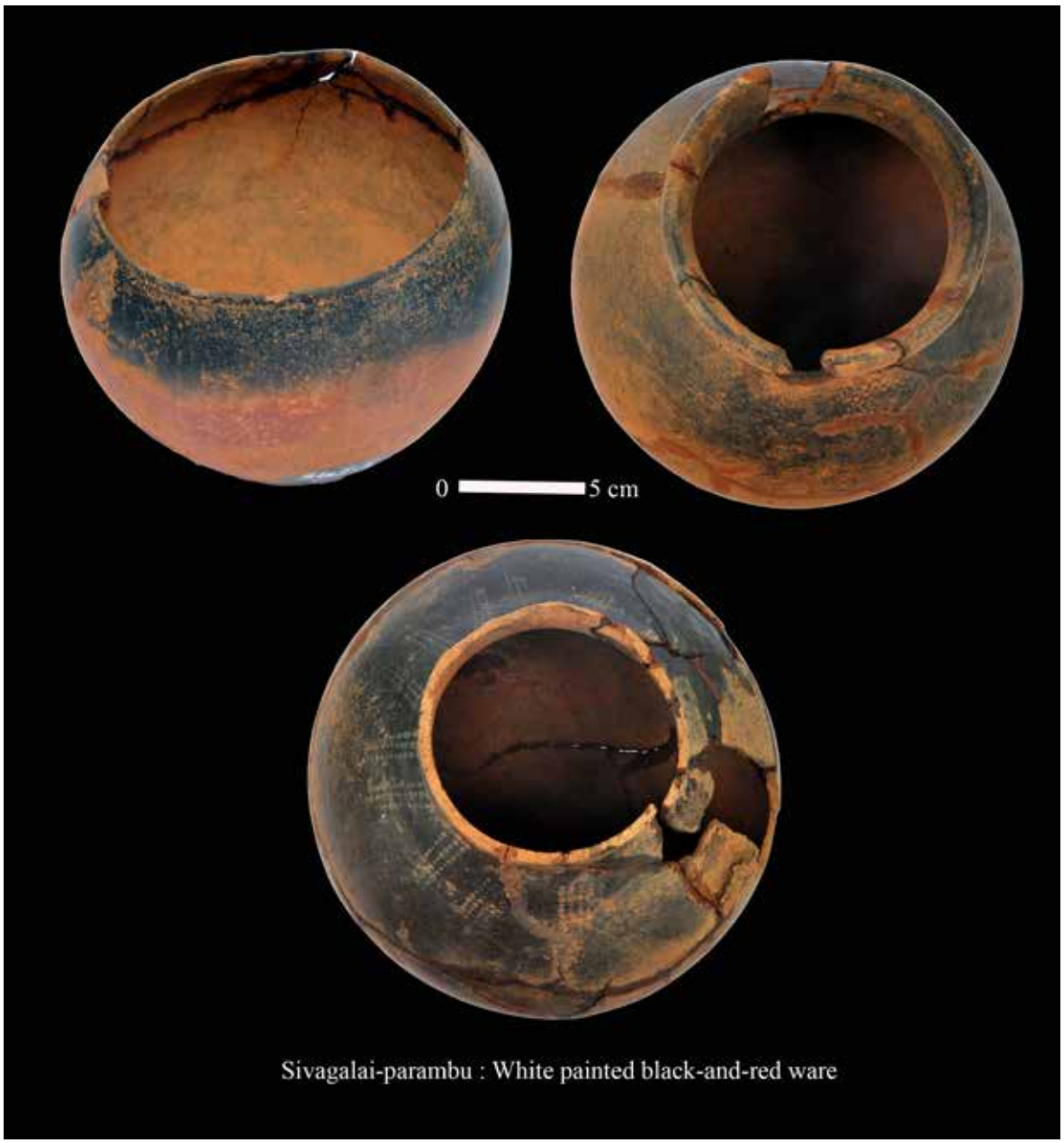


Fig. 2.112. Sivagalai-parambu: White painted black-and-red ware

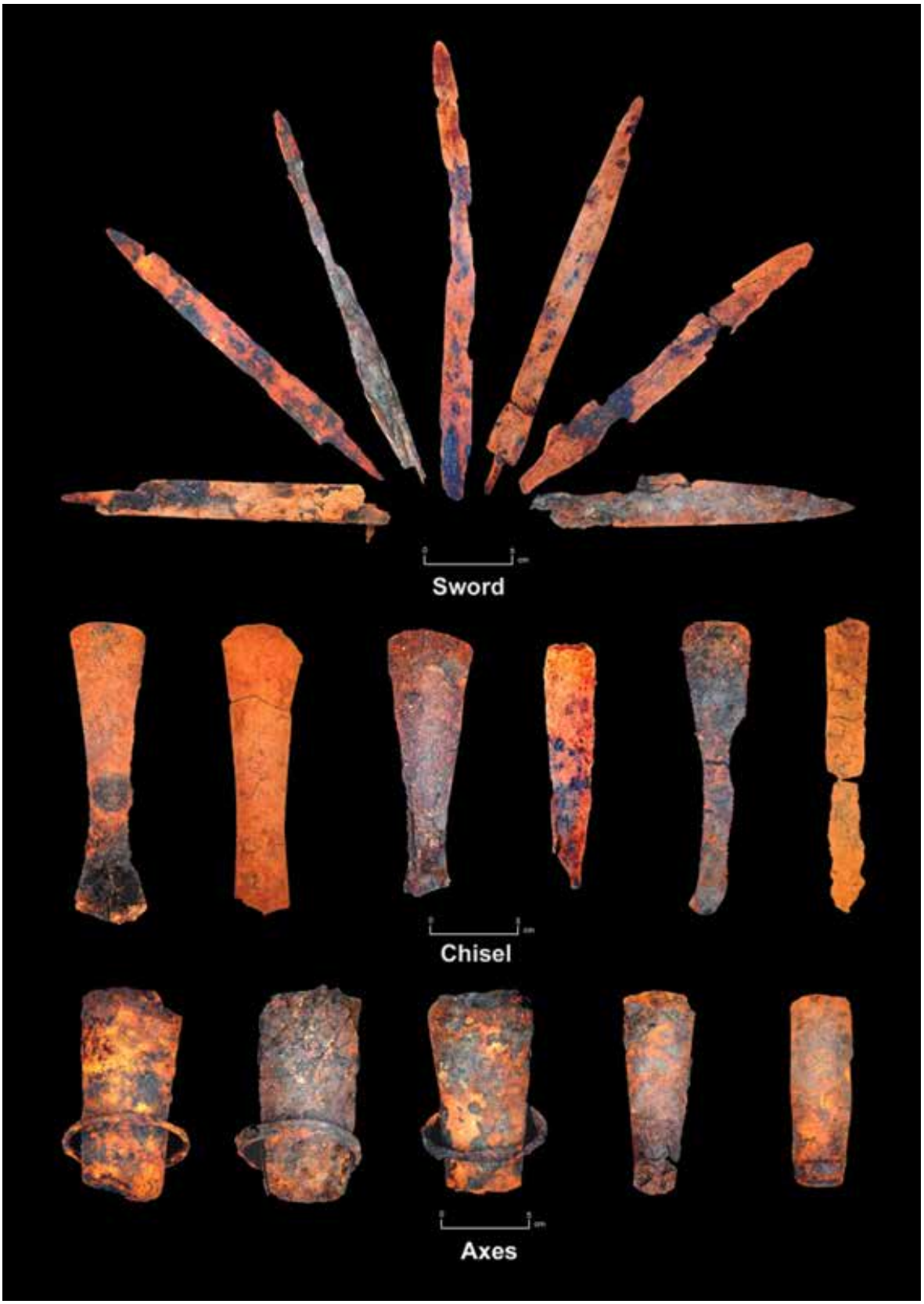


Fig. 2.113. Sivagalai-parambu: Iron objects from graves

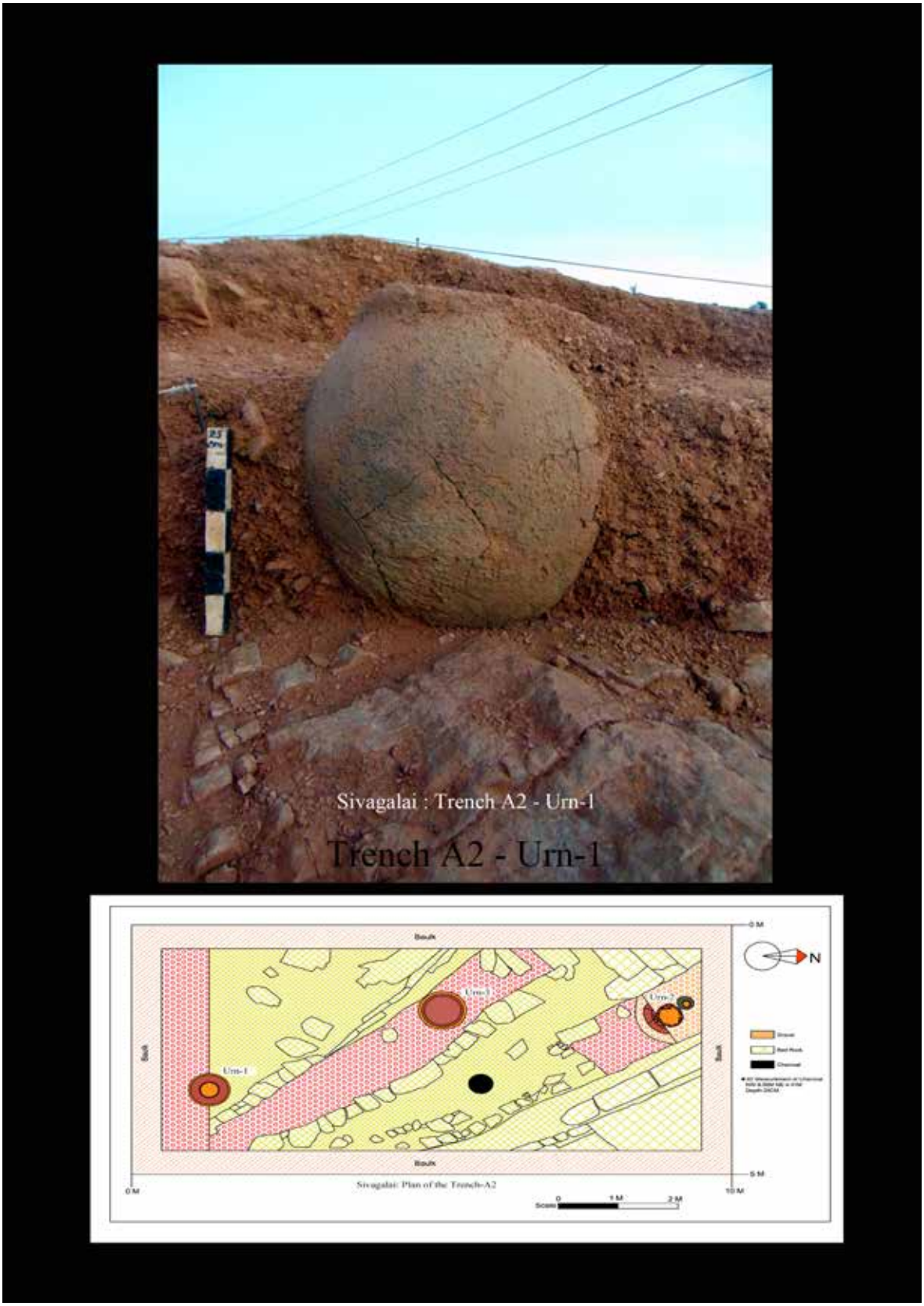


Fig. 2.114. Sivagalai: Excavated trench A-2 with Urn-1

laterite gravel on the second layer and quartzite as the bedrock. Three urns, one belonging to Phase-I and the remaining two belonging to Phase-II were exposed (Fig. 2.114). The first urn (Urn-1) is a small urn placed in the southeast corner of the trench with a broken lid. No lid is present, and the body portions are broken. The second urn (Urn-2) in this trench is a huge urn placed inside a rock-cut channel, which starts from the northeast corner of the A1 trench and continues almost halfway into trench A2. This urn is placed close to the northern section of the trench, and the lid is broken to the rim portion of the urn. This urn belongs to Phase-II. The third urn (Urn-3) is present almost at the centre of the trench, and it is placed inside a channel which starts from the western section and ends at the eastern section. This urn belongs to Phase-II. The urn and the lid of the urn are fully intact, making the contents well preserved.

The Urn-1 yielded iron objects such as a chisel and others. The OSL dates obtained for the pottery pieces of the same urn from two different laboratories, namely BSIP and PRL, provide dates of 2459 BCE and 2427 BCE, respectively, and the charcoal sample collected from the same level provided the AMS date of 2590 BCE (4540 ± BP and cal. 3259 BCE) (Table 2.1). Three dates from the laboratories following two different methods, namely OSL and AMS, provided early dates for the introduction of iron in the mid-3rd millennium BCE.

Table 2.1: Radiometric and OSL dates for iron

S. No.	Site	Sample No	Trench	Age (Base year for AMS 14C is 1950 and for OSL 2020 CE)	Error age +/- (years)	Final calibrated radiometric age (in BCE)	Nature of Date	Re-marks
1	Sivagalai	Beta 583593	B3-Urn-10	4670 BP	30	3345 BCE	AMS ^{14}C	Charcoal
2	Sivagalai	Beta 583592	A2-Urn-1	4540 BP	30	3259 BCE	AMS ^{14}C	Charcoal
3	Sivagalai	Beta 583594	C3/1	4300 BP	30	2953 BCE	AMS ^{14}C	Charcoal
4	Sivagalai	BSIP	A2-Urn-1	4479 BP	358	2459 BCE	OSL	Pottery
5	Sivagalai	PRL	L13-Urn-5	4470 BP	308	2450 BCE	OSL	Pottery
6	Sivagalai	PRL	A2-Urn-1	4447 BP	402	2427 BCE	OSL	Pottery
7	Sivagalai	BSIP	L13-Urn-8	4008 BP	411	1988 BCE	OSL	Pottery
8	Sivagalai	BSIP	L13-Urn-2	3929 BP	334	1909 BCE	OSL	Pottery
9	Sivagalai	BSIP	L13-Urn-5	3856 BP	363	1836 BCE	OSL	Pottery
10	Sivagalai	BSIP	A2-Urn-3	3304 BP	561	1284 BCE	OSL	Pottery

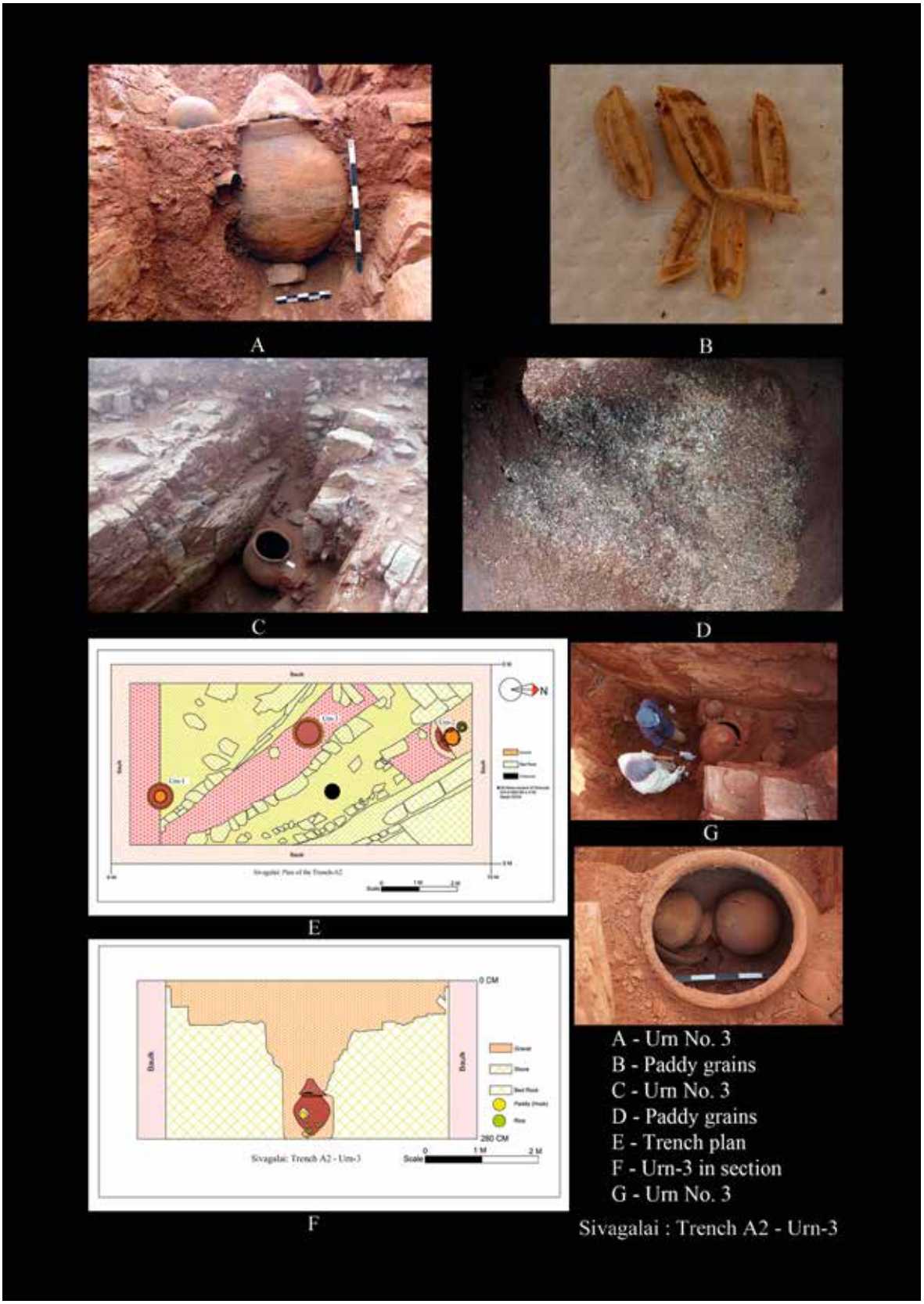


Fig. 2.115. Sivagalai: Excavated trench A-2 with Urn-3

S. No.	Site	Sample No	Trench	Age (Base year for AMS 14C is 1950 and for OSL 2020 CE)	Error age +/- (years)	Final calibrated radiometric age (in BCE)	Nature of Date	Re-marks
11	Sivagalai	Beta 600726	A2-Urn-3	2950 BP	30	1155 BCE	AMS ^{14}C	Paddy
12	Sivagalai	Beta 600727	Habitation-Trench A1-Depth 4 m	2560 BP	30	685 BCE	AMS ^{14}C	Charcoal

Another interesting feature is the date of the paddy samples collected from Urn No. 3 of the trench A2 (Fig. 2.115). This huge urn was placed inside a chiselled channel of east-west orientation. The paddy samples were sent to BSIP for OSL dates and Beta Analytic Laboratory for AMS dates, and both provided a date of 1284 BCE and 1155 BCE, respectively.

The trench B3 was exposed with three urns (Urn nos. 8, 9 and 10) (Fig. 2.116). All three urns placed on the bedrock were exposed from their shoulder portion and the lids are missing, and the body portion has several cracks. The first urn (Urn no. 8) is present near the northwest corner close to the northern section of the trench. The second urn (Urn no. 9) is found at the centre of the western section of the trench. The third urn (Urn no. 10) is exposed almost at the centre of the trench. It yielded iron objects, and the AMS date goes back to 3345 BCE. The charcoal sample collected from trench C3 yielded an AMS date of 2953 BCE.

The trench L13 is exposed with a total of ten urns (Urn nos. 22 to 31), and each quadrant contains 5 urns. Of which in quadrant-I (Urn nos. 22 to 26), only one urn belongs to Phase-I and the remaining four belong to Phase-II. The first and second urns are placed near the northern section, the third urn is placed near the eastern section, the fourth urn is placed near the southern section, and the fifth urn is placed near the western section. Every urn is closed with a lid, and then the pit is filled with soil and stone rubble. Due to the heavy pressure of soil and stones on top of it, the lid breaks apart, and the soil and stone rubble percolate inside the urn.

The five urns (Urn nos. 27 to 31) kept in different depths were unearthed in Quadrant-III, and they belong to the Phase-II. Except for one, all four are intact, and the remaining one is broken and crumbled. The sixth urn (Urn no. 27) is kept near the eastern section, the seventh urn (Urn no.28) is kept near the western section, the eighth urn is kept near the right corner of the southern section (Urn no.29), the ninth urn (Urn no.30) is kept near the southeast

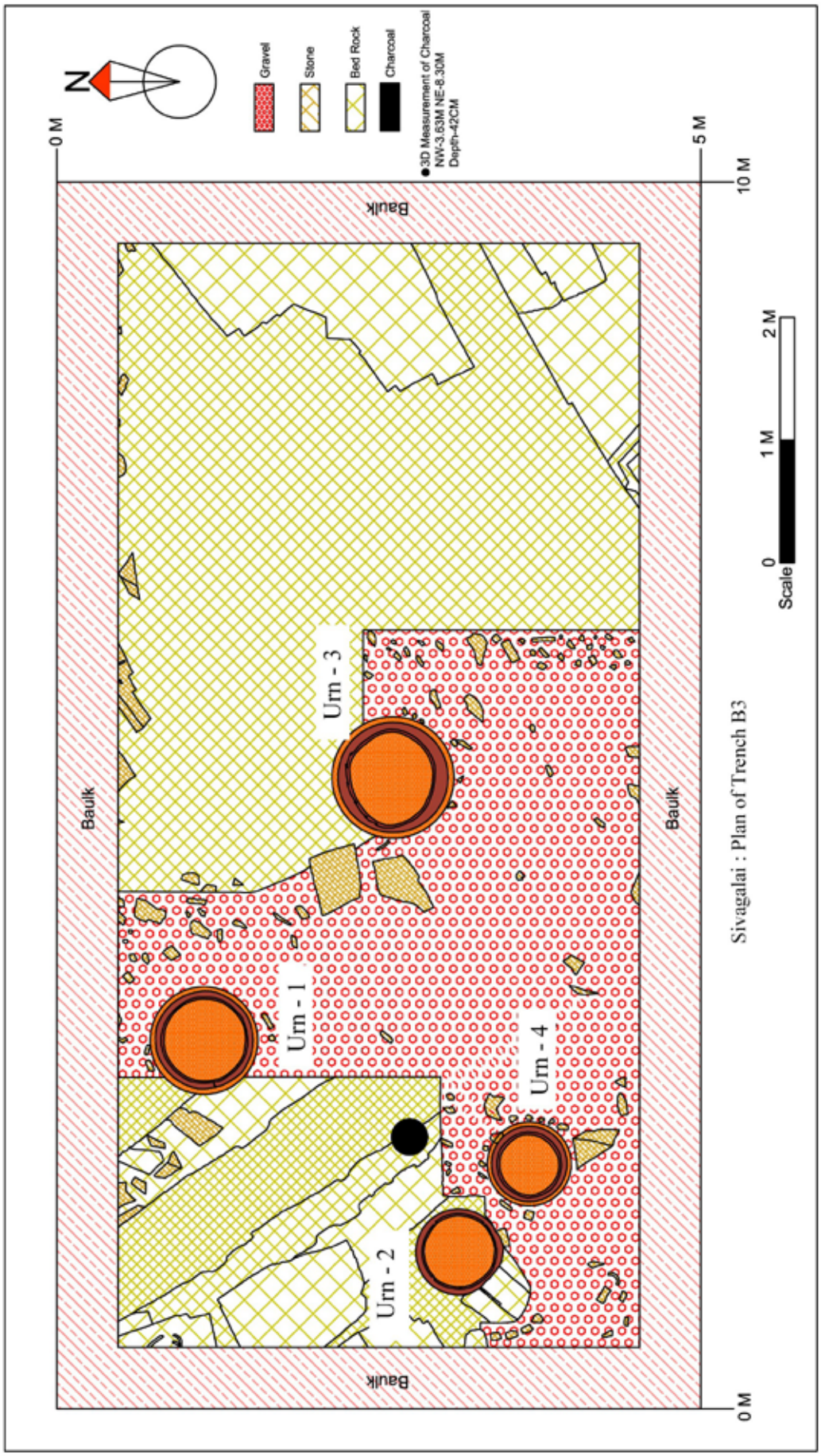


Fig. 2.116 . Sivagalai: Plan of the trench B-3

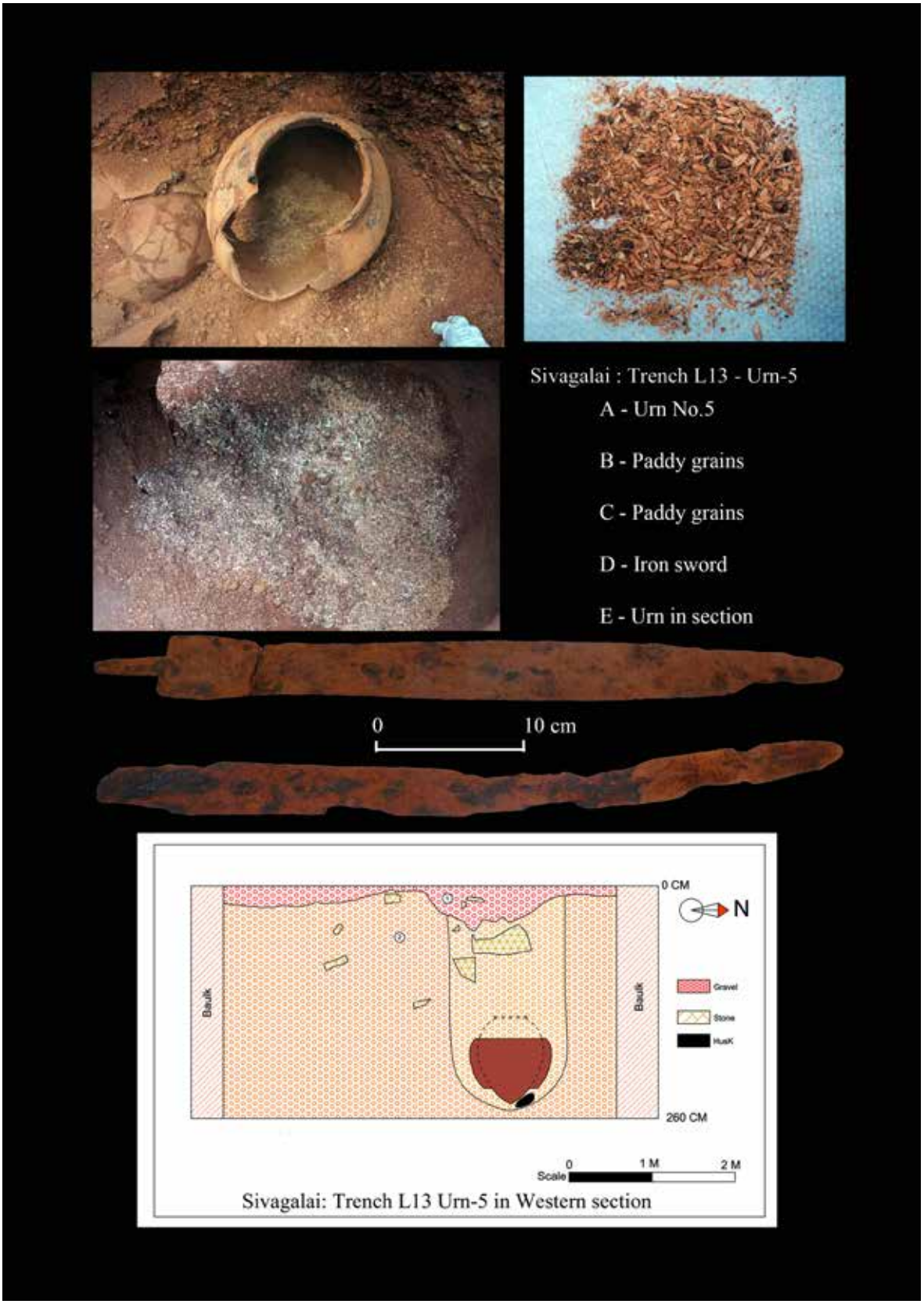


Fig. 2.117 . Sivagalai: Excavated trench L-13 with Urn-5

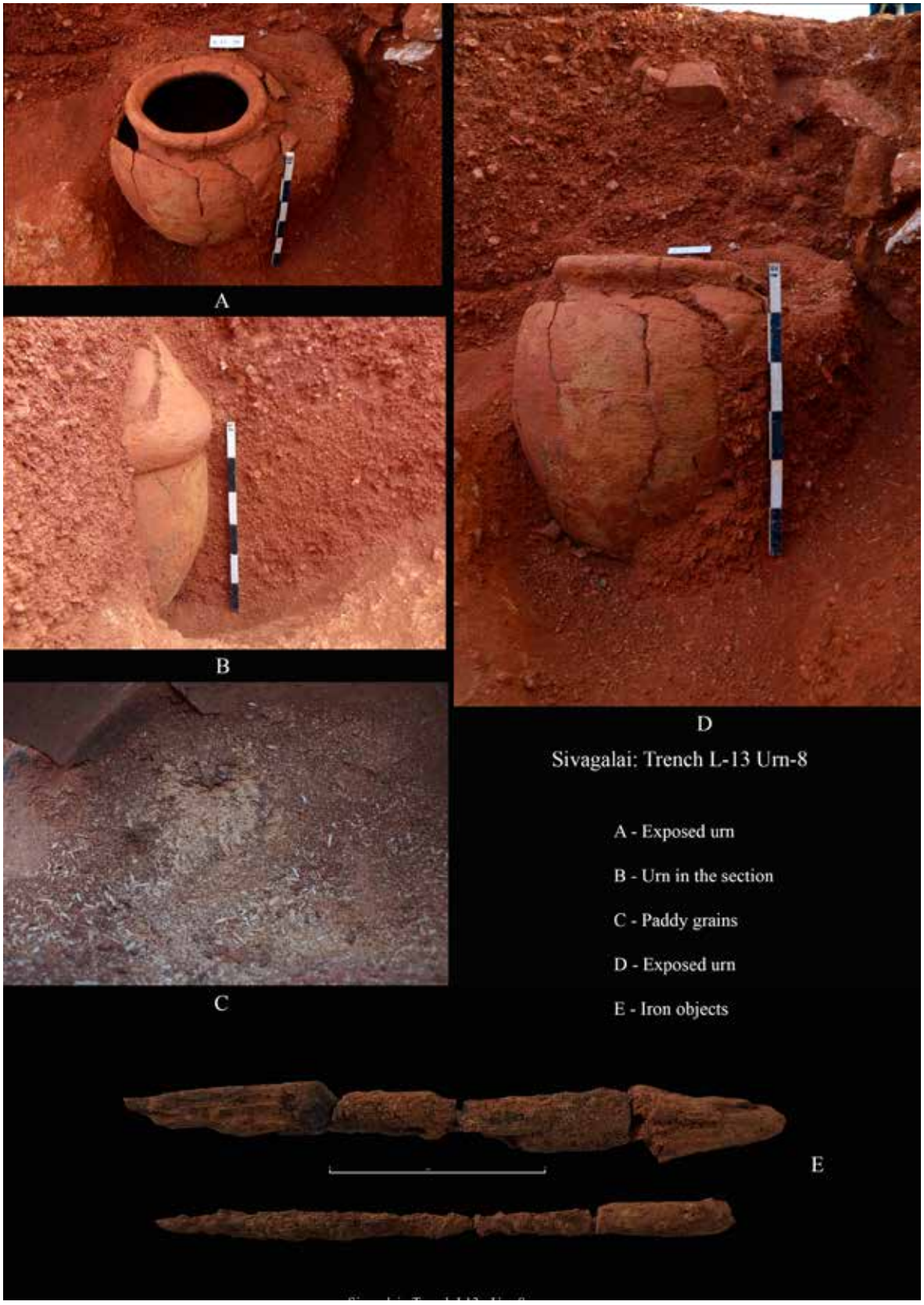


Fig. 2.118. Sivagalai: Excavated trench L-13 with Urn-8

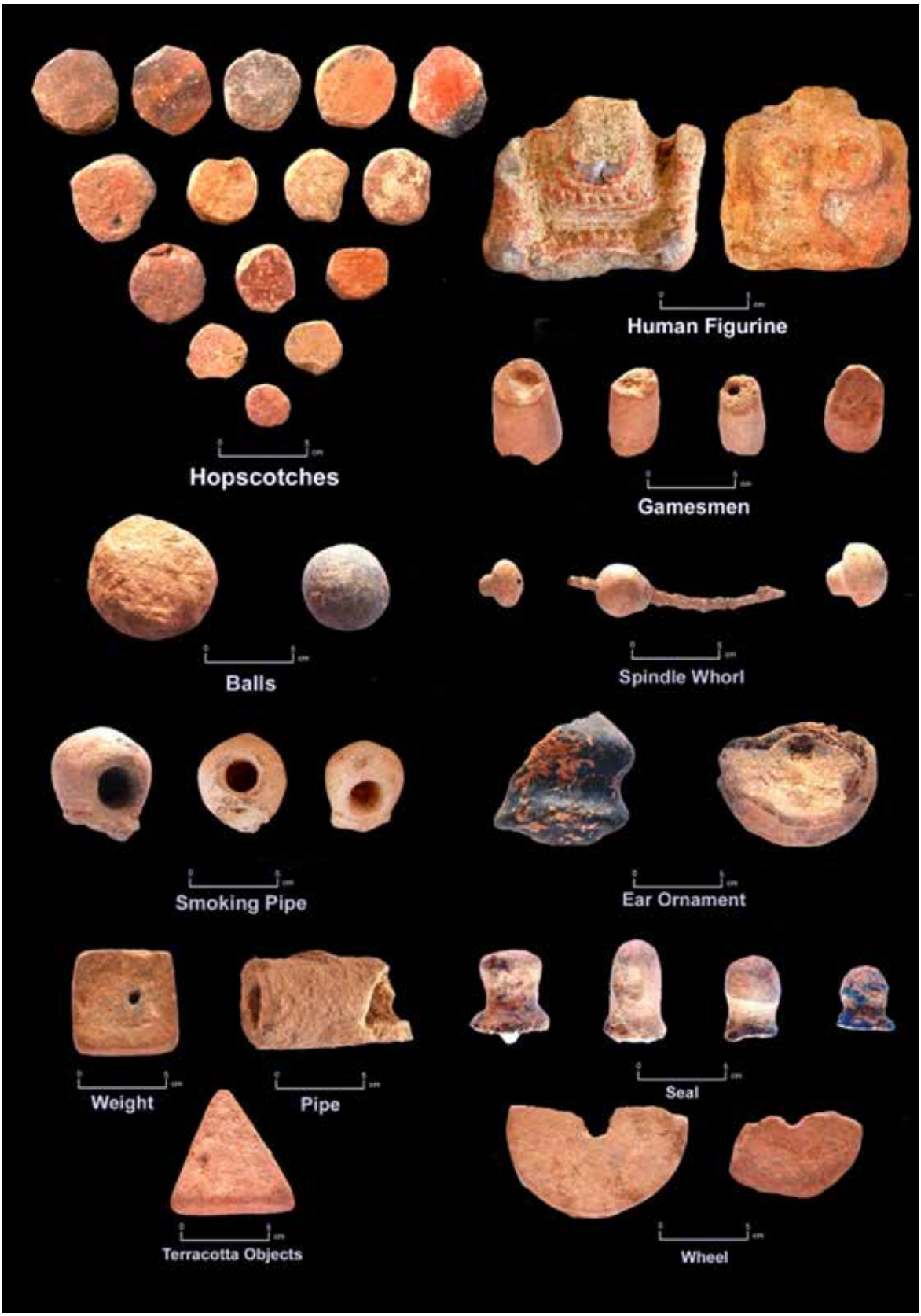


Fig. 2.119. Sivagalai: Terracotta objects recovered from habitation cuttings

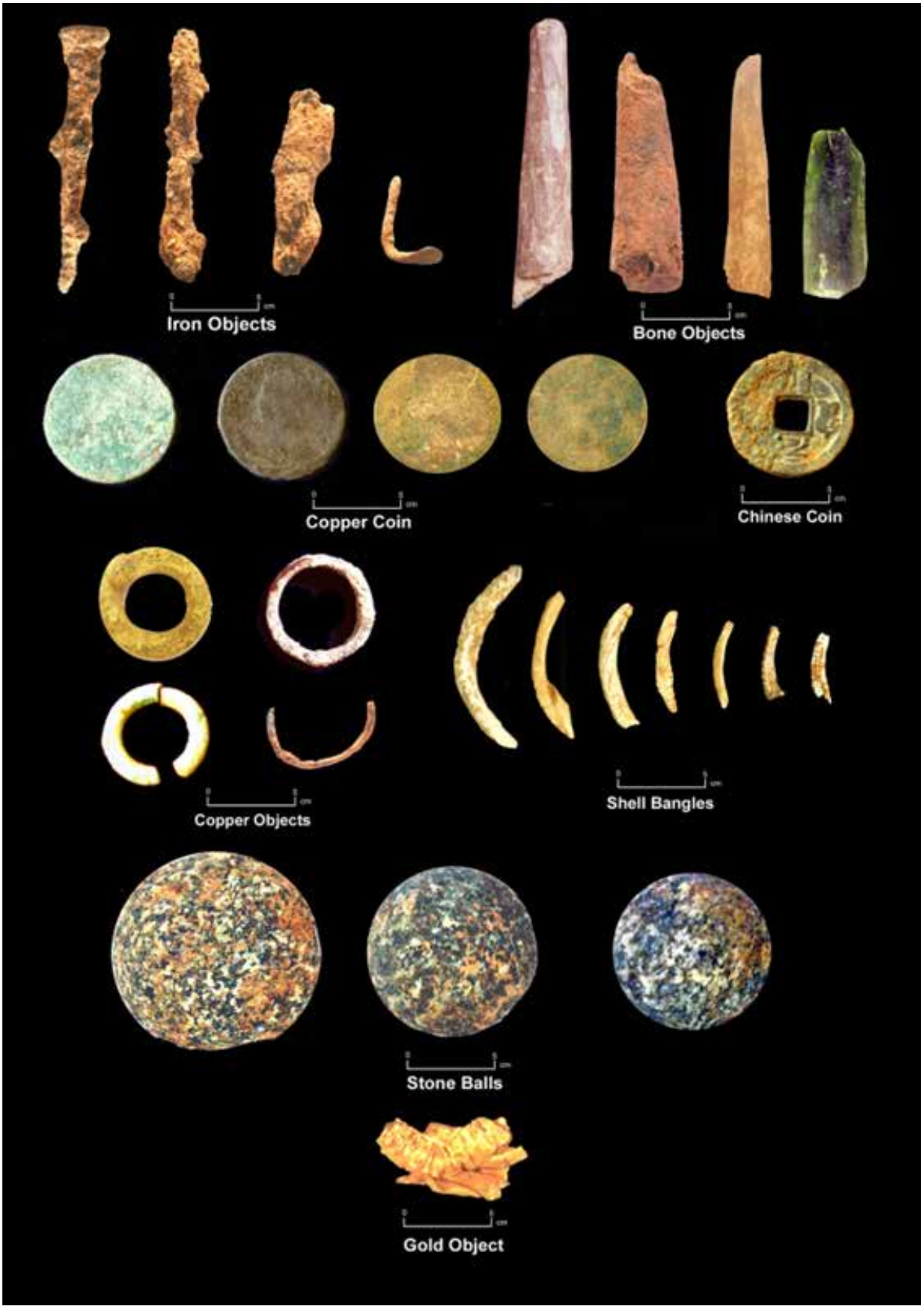


Fig. 2.120. Sivagalai: Antiquities recovered from habitation cuttings

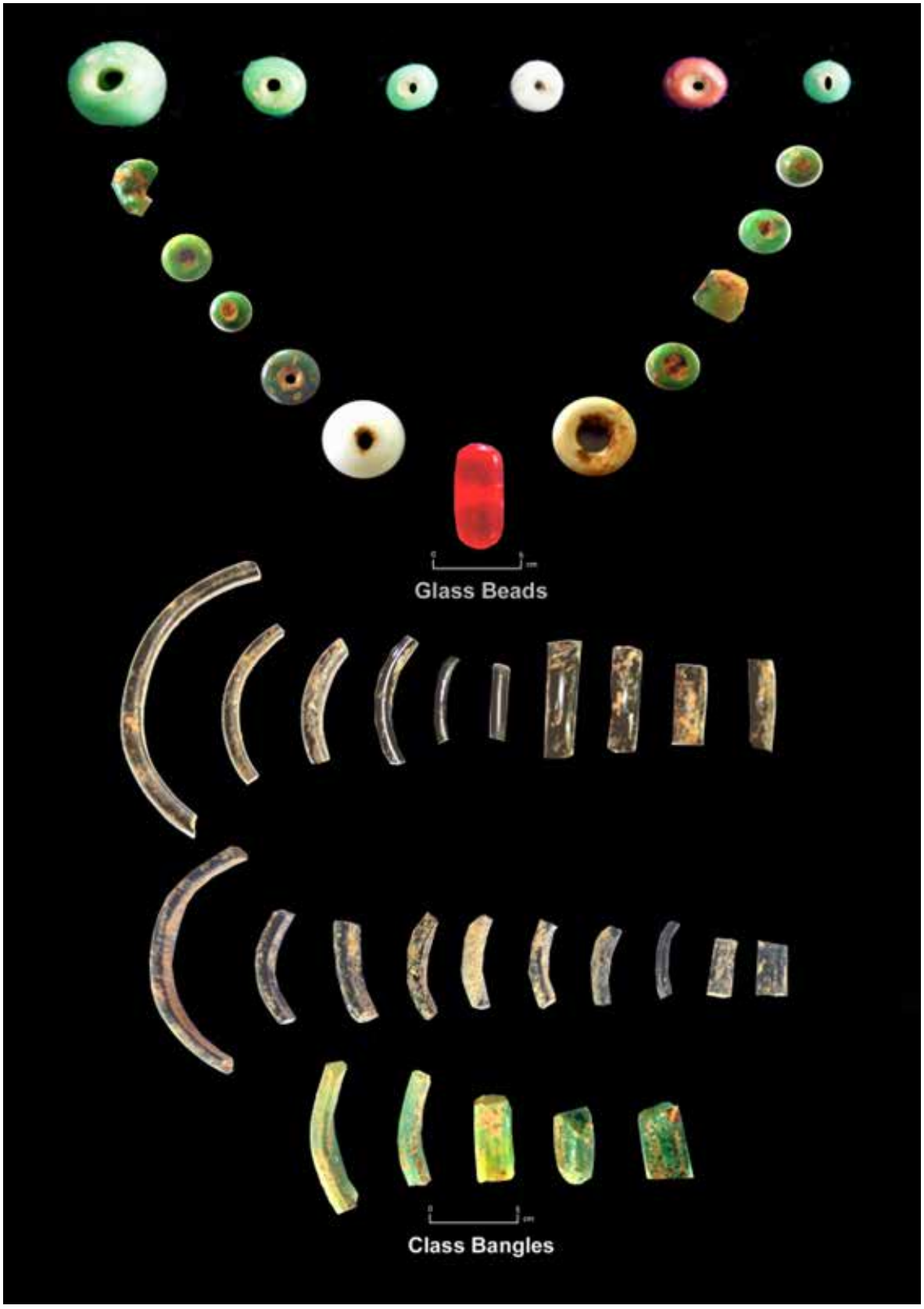


Fig. 2.121. Sivagalai: Glass objects recovered from habitation cuttings

corner of the trench and the tenth urn (Urn no.31) is kept at the centre of the quadrant. The two urn piece samples collected from Urn-5 were sent for OSL dating to BSIP and PRL, and both provided the dates of 1836 BCE and 2450 BCE, respectively (Fig. 2.117). The sample collected from Urn-8 met with an AMS date of 1988 BCE (Fig. 2.118).

Habitation Site

Habitation mound is located at five localities namely Valappalanpillai-Thiradu (9.5586°N; 77.8111°E), Parakkiramapandi-Thiradu (9.3722°N; 77.9769°E), Avarangadu (8.6330°N; 77.9797°E), Pottalkottai-Thiradu (9.4825°N; 78.6527°E), and Chekkadi (9.3802°N; 79.2941°E), in and around Sivagalai. Of the five, the excavations were initiated in Valappalanpillai-thiradu and Parakkiramapandi-thiradu, and an appreciable number of antiquities were recovered (Figs. 2.119-2.121)

Valappalanpillai Thiradu

Valappalanpillai-thiradu is located 5 km northwest of Sivagalai and 1 km from the graveyard Sivagalai parambu. The river Tamiraparani flows 2 km south of the settlement. The 6 m high mound was partially disturbed, leading to the occurrence of microlithic tools and white-painted black-and-red ware on the surface. However, the undisturbed strata start at a depth of 3.50 m. Three trenches A1, B2 and YC1, were laid, and four quadrants were dug (A1-I and II; B2-III and YC1-I). The maximum cultural deposit of 6.25 m was exposed in trench AI in seven layers. Microlithic tools were recovered in trench B2 between the depths of 1.82 and 3.94 m. Many varieties of antiquities have been found in this quadrant at various depths, such as TC figurines, hopscotches, copper coins, unknown TC objects, shell bangles, TC wheels, and chert stone tools. Apart from these antiquities, pottery pieces with graffiti marks and Tamil-Brahmi script are found.

Parakkiramapandi-thiradu

Parakiramapandi-thiradu is located one km west of Sivagalai-parambu. In total, 3 trenches were excavated. At 172 cm depth, a brick channel laid in a north-south orientation was identified from quadrant IV of A1 trench (Fig. 2.122). At a depth of 180 cm, a floor was seen in quadrant A1/I. A total number of 402 antiquities, such as Chinese coins, Chinese celadon ware, hopscotches, spindle whorls, bone points, copper rings, glass bangles, shell bangles, grinding stones and terracotta objects, were collected from the excavated trenches of Parakiramapandi-thiradu.

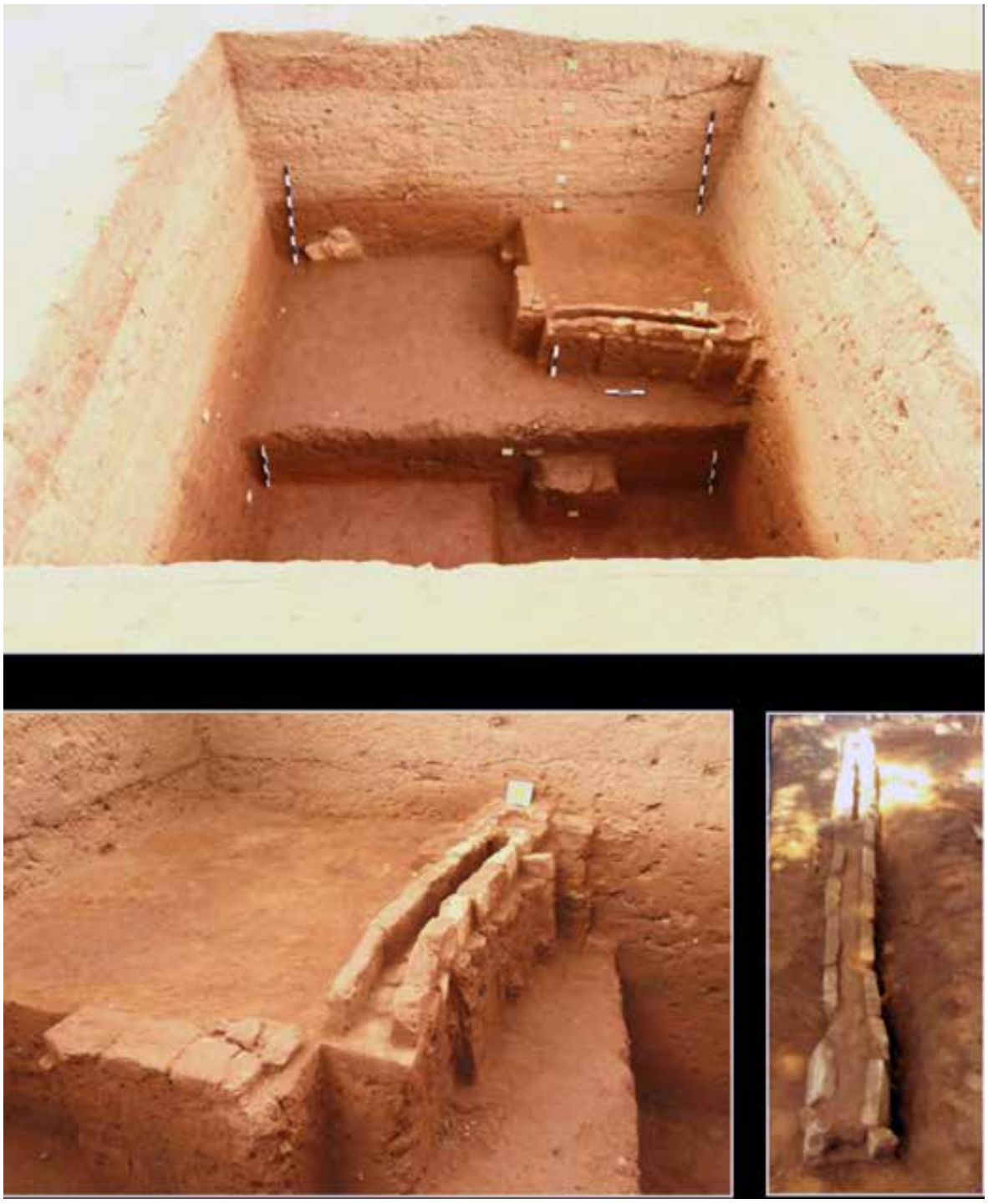


Fig. 2.122. Sivagalai: Brick canal exposed in habitation cuttings

Graffiti and Tamil̲i

Aavarangadu

Aavarangadu village lies 2 km southwest of Sivagalai-parambu. A solitary trench was laid at Aavarangadu, and it yielded potteries like red ware, black-and-red ware, black ware, and red slipped ware. Antiquities such as iron objects, hopscotches, terracotta seal, terracotta smoking pipes, copper coins and copper ring were found in the 185 cm cultural deposit.

The habitation mound Chekkadi is a part of the present village Sivagalai. Another habitation mound, Pottalkottai-thiradu, lies 3 km west of Sivagalai-parambu. The trenches laid at Chekkadi and Pottalkottai-thiradu did not meet with any appreciable antiquities.

Graffiti bearing potsherds

The excavation conducted in the habitation mound met with one hundred and fifty post-firing graffiti-bearing potsherds, mostly engraved on the shoulder portion of the pots. Most of the graffiti marks are seen on tableware, predominantly on red ware, and a few on black-and-red ware. The signs include a ladder, a vertical line at the centre and two oblique lines on either side, all meeting at the top and a star-like sign. These inscribed potsherds were collected within an average depth of 100 cm to 450 cm (Fig. 2.123).

Tamil Brahmi Inscribed Potsherds

The excavation conducted at Valappalanpillai-thiradu site has yielded five Tamil̲i (Tamil-Brahmi) inscribed potsherds, mostly engraved on black-red-ware carrying personal names such as ātan̲, patavan̲, pānā, *tai, etc.*,

Cultural Sequences

Based on the material evidence such as microlithic tools, urn burials, white-pained black-and-red ware, graffiti-bearing potsherds, Tamil̲i (Tamil-Brahmi) inscribed potsherds, Chinese coins, celadon ware and other artefacts supported by a series of AMS and OSL dates obtained both from the graves and the habitation cuttings, provided clues to understanding the cultural chronology of the site. The excavated cultural remains have been divided into five cultural periods:

Period I	:	Early Iron Age	3345 BCE - 1200 BCE
Period II	:	Iron Age	12th century BCE – 7th century BCE

Fig. 2.123. Sivagalai: Microlithic tools, Graffiti and Tamil-Brahmi inscribed potsherds

Graffiti and Tamil

Period III	:	Early Historic	6th century BCE – 3rd century CE
Period IV	:	Early Medieval	4rd century CE - 10th century CE
Period V	:	Medieval	11th century CE - 14th century CE

Chronology

From Sivagalai, 5 AMS dates and 7 OSL dates were obtained from three laboratories (Beta, BSIP and PRL). The six dates collected from urn burials with iron provided interesting evidence. It yielded the date of cal. 3345 BCE, 3259 BCE, 2953 BCE, 2459 BCE, 2450 BCE and 2427 BCE and all fall in the time range between 2400 BCE and 3350 BCE. Out of six dates, the urn piece (Urn no. 1) collected from the Trench-A2 was sent to BSIP and PRL for OSL date, and both provided the dates of 2459 BCE and 2427 BCE, respectively. These two dates from two different laboratories confirm their credibility. To confirm further, the sample collected from the same urn (Trench A1-Urn no. 1) was sent to Beta Analytic Lab. For the AMS date, which provided the uncalibrated date of 2590 BCE (4540±30 BP and cal. 3259 BCE). All three dates (two OSL and one AMS) fall in the time range between 2427 BCE and 2590 BCE, with the mid-range value of 2490 BCE. The average mid-range value of all six dates for iron falls around 2815 BCE. In this sense, the introduction of iron technology in Tamil Nadu goes back to the mid-3rd millennium BCE.

Another two samples (ceramic and paddy) collected from the grave (Trench A2-Urn-3) were sent to BSIP for OSL date (ceramic piece of Urn-3 of Trench A2) and Beta Analytic Lab. for AMS date (paddy collected from the same grave, Trench A2-Urn-3) to check and reconfirm the date. The OSL date of 1284 BCE and the AMS date of 1155 BCE were obtained. Both the dates obtained from two different Laboratories and from two different techniques provided closer dates, which reconfirmed and attest to their academic credibility. Based on the above inferences, one could safely place the introduction of iron in South India between 2500 BCE and 3000 BCE, though two dates, 3259 BCE and 3345 BCE, fall in the first quarter of the 4th millennium BCE. These dates provide another important cultural feature: when north India was experiencing the Copper Age, south India entered the Iron Age. Thus, the Copper Age of north India and the Iron Age of south India are contemporary in context.

Another interesting feature that needs to be observed is the date of the Brahmi script. The charcoal sample obtained at a depth of 4 m in association with Tamil (Tamil-Brahmi) from the habitation Trench A1 of Valappalanpillai-thiradu provided a date of 685 BCE. As discussed above, the introduction of iron in Tamil Nadu goes back between 2500 BCE and 3000 BCE

and paddy cultivation was well established in river valleys in 1155 BCE or still earlier, and the introduction of the Tamil-Brahmi script pushed back to the 7th century BCE. All these dates may be pushed back further depending on future excavations and scientific dates.

12. Teriruveli

Teriruveli (9°19'27.84"N and 78° 37' 23.88" E) is located 33 km from Ramanathapuram near Uttirakosamangai in Muthukulattur taluk of Ramanathapuram district. The river Gundar flows 2 km north of the village. The Iron Age and Early Historic habitation mound locally called *Kalani-Tidal* and *Colony-Tidal* was noticed by the Tamil Nadu State Department of Archaeology, and excavations were conducted in the year 1999-2000. Seven trenches laid in the habitation mound, locally known as colony *tiḍal,* yielded NBP (Northern Black Polished Ware), coarse red ware, black ware, black-and-red ware, grey ware, rouletted ware and russet-coated ware. The fish sign is found as a graffiti mark (*IAR* 1999-2000:149). There were several objects such as lids, hopscotches, spouts, terracotta ring stands, iron pieces, terracotta lamps, shell bangles, sawed conches and carnelian beads. This excavation shows a different cultural order wherein the Microlithic phase preceded the Early Historic and Iron Age.

Other notable antiquities are iron knives, deer horns, terracotta spindle whorls, shell bangles, carnelian, glass and terracotta beads. Seven Tamiḻ-Brāhmī inscribed potsherds reading korraṉ, neḍuṅkil[li], llaṉ, ma-ṉa-a, kuṟa, taraiyi, and cātaṉ were collected from the excavation (Sridhar 2011:99-144). In case of graffiti bearing potsherds, nearly 227 were documented from the reserve collection, though it was reported as 65 sherds in Period-I and 26 in Period-II in the report.

13. Thulukkarpatti

Thulukkarpatti (8°25'40.00"N, 77°40'12.02"E) lies 2 km north of Anaikulam, 6 km east of Thalapathisamudram and 9 km north-east of Kottaiyadi (Valliyoor) on the Valliyoor - Chittoor road in Radhapuram taluk, Tirunelveli district. The Iron Age-historical habitation mound raised 2.5 m above the surface covering an area of 12 hectares, locally called *vilaankadu,* is located east of the village on the way to Kannanallur and on the southern bank of the river Nambiyar (also called Thottavilai river). The excavations were carried out in the years 2021-22 and 2022-23. The excavations carried out at Adichanallur by the ASI, TNSDA, and Sivagalai by TNSDA on the banks of the river Tamiraparani revealed the nature of the graveyard. However, the close relationship between the settlement and the graveyard could not be ascertained due to the non-availability of the much-needed habitation mound. The high water table due to the proximity of the river also hindered reaching the natural soil. Therefore, Thulukkarpatti, the nearest and

most well-preserved habitation-cum-burial site, is selected for excavation. The excavations are planned with the intention that the study of the ceramic sequence would help to place the Adichanallur and Sivagalai graves in a proper chronological context.

Site Settings

A considerable number of sites were identified on the banks of the river Nambi during the exploration conducted in 2008[1] in this region. Among them, Kannanallur and Sirumalanji (Sasthapuram) are microlithic sites met with blades, points and scrapers made of chert and quartz. The sites such as Anaikulam, Chittoor, Rajakkalmangalam, Thangayam, Vaitilingapuram, Thulukkarpatti, Dhalapathisamudram, Melur and Kumaraputhukudiyiruppu were identified with habitation mound of the early historic period. The Murugan temple of c.13th century CE, the Perumal temple of 15th century CE and the sati stones of 16th century CE were noticed at Vadakku Valliyur. The sites such as Mavadi, Thenkarai (Rajakkalmangalam), Thangaiyam, Kannanallur, Panisakulam, Panrimalai, Kottai Karunkulam (Nambi dam) and Kovankulam Kaspa were identified in the recent survey that helped to understand the cultural potentiality of the region. On exposures of several stone sculptures with a few having label inscriptions, the excavations were conducted in *Iraniyan Kudiiruppu* at Rajaakalmangalam in the year 2009-10 by the TNSDA, about one kilometre west of Thulukkarpatti, revealed the base of a temple with Early Pandya architecture belonging to the 8th century CE.

Cultural Sequence

The excavations were conducted in the years 2021-22 and 2022-23, and 35 trenches (17 in the first season and 18 in the second season) were laid in mounds (Fig. 2.124). The cultural deposits ranging from 1.30 m to 3.95 m met with two cultural periods namely the Iron Age (9th century BCE-7th century BCE) and Early Historic (6th century BCE to 1st century BCE). The cultural periods are divided based on Tamil̲i (Tamil-Brahmi) inscribed potsherds, two silver punch-marked coins and ceramic assemblages such as black-and-red ware, white painted black-and-red ware, russet-coated painted ware, rouletted ware and associated artefacts.

Period-I yielded a finer variety of black-and-red ware, black ware, white painted black-and-red ware and black ware, graffiti-bearing potsherds and antiquities such as iron objects, hopscotches, iron ore, iron slag, tuyeres and iron smelting furnaces. Similar ceramic varieties have been reported at the last phase of the Iron Age level at Sivagalai and Adichanallur, where the AMS date obtained in the range between 1150 BCE and

1 S.Nos.1593, 1577, 1582, 1625, 1635, 1645 of *Catalogue of Archaeological sites in Tamil Nadu*, Vol.2.

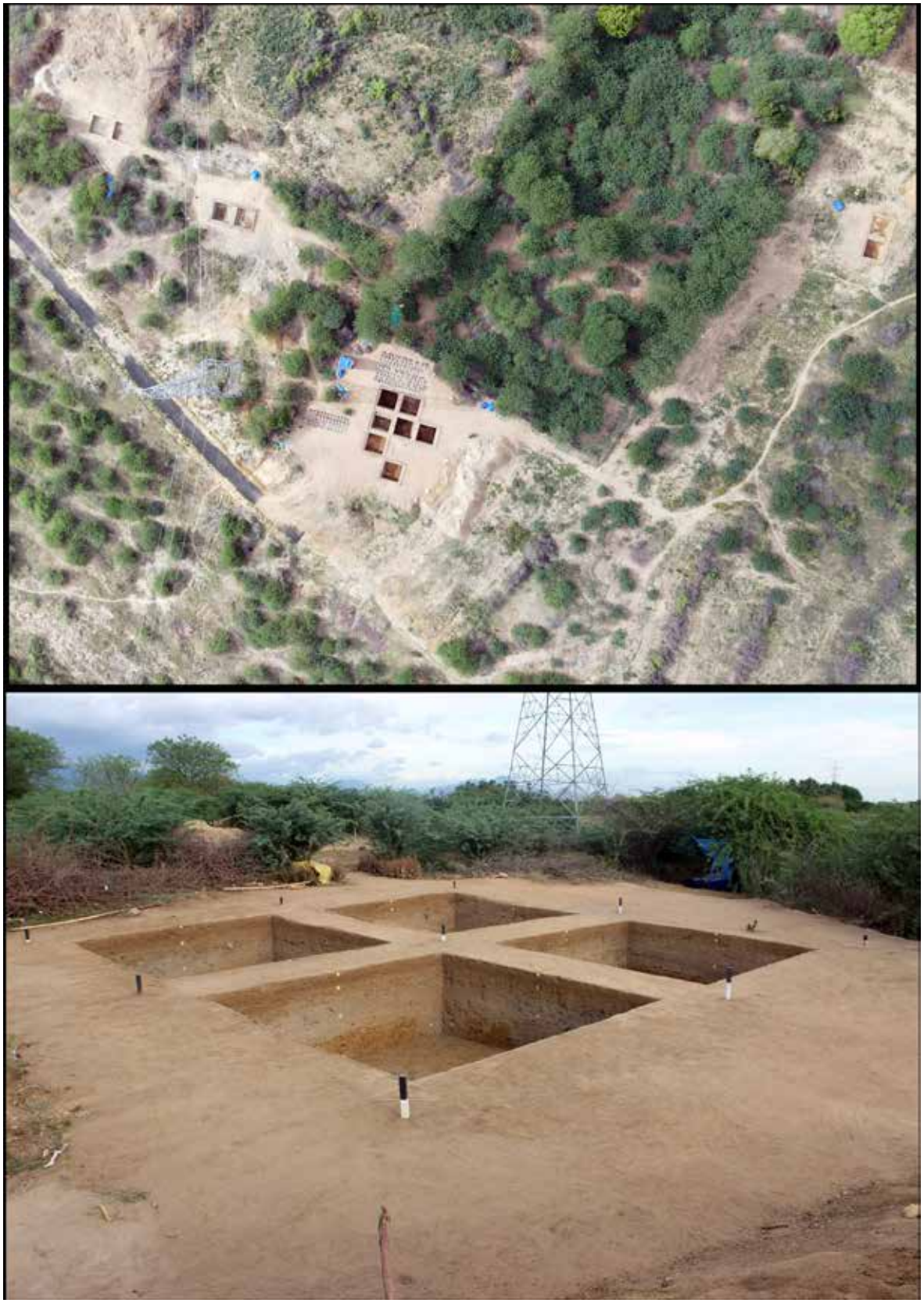


Fig. 2.124. Thulukkarpatti: Excavated trenches

950 BCE. The same date can be fixed tentatively for this cultural period, keeping the proximity of the site Thulukkarpatti.

Similar ceramic types were found on the upper level too (Period-II), but medium to fine fabric, Tamiḻi (Tamil-Brahmi) inscribed potsherds, graffiti inscribed potsherds and antiquities such as two silver punch-marked coins, terracotta gamesmen, terracotta beads, hopscotches, semiprecious stone beads, glass beads, iron objects, copper objects such as antimony rod and copper bangles found in large numbers.

Antiquities

One of the highlights of the excavations is the occurrence of 4820 graffiti-inscribed potsherds, the highest number ever exposed in any excavations of Tamil Nadu, which were brought to light in a limited 875 sq m area of excavation, accounting for an average of 5.15 sherds per sq m. Besides, the excavation brought to light 3137 antiquities (1009 in the first season and 2128 in the second season) which include artefacts made of glass, terracotta, copper, iron, gold, bone, ivory and stone (Fig.2.125). Among the antiquities, the glass beads dominate the scene, particularly in the upper layer. The colours of glass beads include green, maroon, black, orange, yellow, royal blue, indigo, teal, turquoise and off-white, with domination of green. Bichrome and polychrome beads were also found. The bichrome beads usually consist of either an outer orange colour and inner maroon colour or an outer maroon colour and inner black colour. A polychrome bead was found, which has an orange colour on the outer side, a maroon colour in the middle and black on the inner side. This bead shows a remarkable skill in glass moulding and annealing. The shapes of the beads include circular, cylindrical, spherical, disc, bi-conical and tube. The circular beads were dominant followed by cylindrical, spherical, tube, disc and bi-conical. The tube-shaped beads were mostly maroon. The objects made out of terracotta include hopscotches, ear ornaments, beads, wheels, spindle whorls, net sinkers, figurines, burnishing tools, miniature bowls and pendants. The terracotta beads are mostly spherical in shape with a hole in the centre and black in colour. More than thirty gamesmen, mostly black in colour, were found. They were solid, cylindrical in shape and varied in height. Some of them had a broad base and a tapering body. Some of the spindle whorls were noticed intact with the iron rod. The ear ornaments were circular in shape, having a concave central fold. Both plain and decorated ear ornaments were found. The decorations included simple lines, a spiral vortex and a flower design with dots. The availability of fish-hook and net-sinkers used as weight at one end of the fishing net reflects the river or sea-fishing. A stellate-shaped toy object with a seven-pointed star, two cylindrical pendants with flat bottoms and tapering towards the top, and two terracotta figurines, one identified as a bull, are found. A significant quantity of burnishing tools and six terracotta balls, six bone points, shell bangles and beads, sling balls,

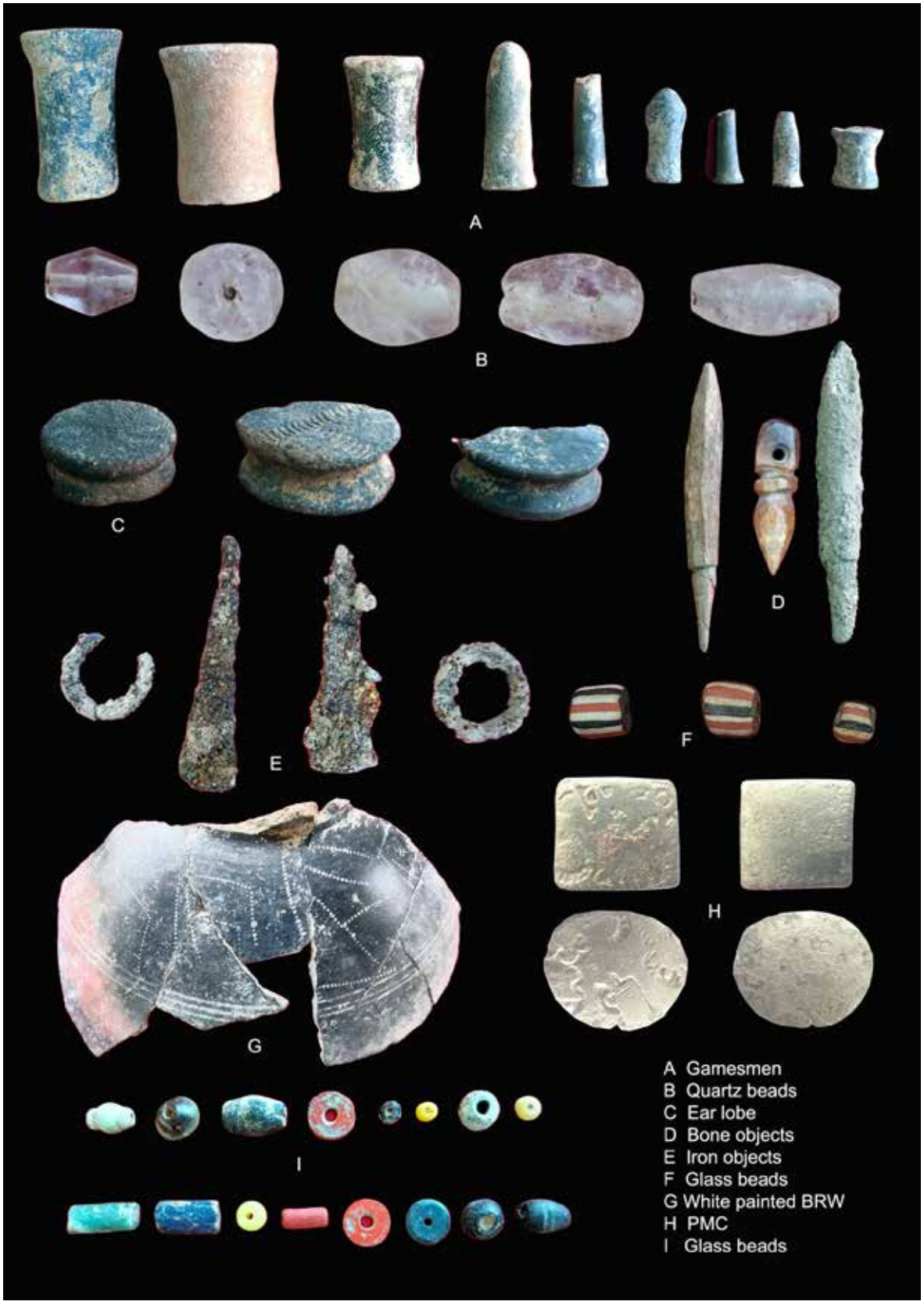


Fig. 2.125. Thulukkarpatti: Antiquities

discs, grinding stones, querns, muller and hones made of stone, beads of semi-precious stones such as agate, amethyst, carnelian, quartz and soapstone, more than twenty copper objects including bangles, rings, wires, antimony rods, lids, clappers and a small figurine were found. An interesting object is a tiger figurine. A significant amount of iron objects, such as chisels, spearheads, daggers, arrowheads, nails, rings, knives, fish hooks, ladles, rods and clamps, were unearthed. A fragment of a gold ring is also collected.

Pottery

The excavations yielded plain black-and-red ware, white-painted black-and-red ware, black-on-red ware, back ware, red ware, red slipped ware and rouletted ware. Black-and-red ware is found in all the layers, and predominates in all strata except layer one and is found along with black ware, black slipped ware, red ware, and red slipped ware. The pottery is made of well-levigated clay and has a fine to medium fabric and is wheel-made. The general shapes were pots, bowls, dishes, basins with spouts, and miniature vessels. Some potteries are decorated with white paintings. The identified designs are dotted designs and line designs on the rim portion of the bowl. The white-painted black-and-red ware was found in large numbers in the Iron Age level, and its occurrences started going down while approaching the Early Historic period. They are generally applied to bowls, pots and lids. The designs are mostly in dot and oblique lines. In bowls, it is normally decorated just below the rim portions. More than 4500 painted potsherds were unearthed.

Some of the black ware bearing white kaolin paintings, such as dotted designs and line designs. Red ware is a common type of pottery. It was more predominant at the early historical level. A few potteries have beautiful decorations of grooved lines, incised designs and floral patterns. A few russet-coated painted sherds have been reported. The shape of this ware is mostly bowls, cups and pots, mostly with dotted design and line pattern, wavy designs. It is dominantly noticed in layer-1. Brown Slipped Ware is mostly restricted to the globular pot variety.

The rouletted ware dishes are found in a fine variety, and the decoration is noticed on the inner surface of the flat base. The patterns consist of one to three bands of concentric circles, each band containing three to ten rows of closely placed indentations which look like tiny dots, strokes, wedges, triangles, or other shapes. Rouletted ware is yielded in the level of layer 1 of the cultural deposit in association with russet-coated ware.

The perforated ware is found in red ware and black ware with holes ranging from 2 mm to 15 mm. The decorations in the pottery were the linear decorations or geometrical designs

of white kaolin on the black-and-red ware, black ware, russet-coated painted ware and red ware. Effects found on the surface of the pottery were categorized into pinching and incised designs. Storage jars and some potteries have many decorations such as incised patterns, pinching designs, thumbed and nail impression marks, geometrical and floral patterns.

Inscribed potsherds

It yielded both graffiti and Tamil̲i-bearing potsherds. The uniqueness of the site is the occurrence of a large number of graffiti-bearing potsherds, numbering more than 4820 sherds, which were collected throughout the cultural period, with much concentration in the pre-Brahmi level. The most common graffiti marks are the arrow marks and their variants, U-shaped semi-concentric circles, ladders, stars, tridents, vertical lines hanging from a horizontal line, vertical strokes, wavy lines, two oblique lines meeting at the top and Asokan-Brahmi 'ma' like signs, etc. A large number of graffiti potsherds are noticed in black-and-red ware, followed by red slipped ware and red ware. Thirteen Tamil̲i inscribed potsherds were recovered reading personal names such as *tisa, kuviraṉ* and *puli.*

The occurrence of a large number of graffiti-bearing potsherds, Tamil̲i inscribed potsherds, white painted black-and-red ware, russet coated ware, rouletted ware, punch-marked coins and a variety of antiquities from a limited area of excavation covering less than 1000 sq.m. shows the cultural significance of the site. The excavations at Adichanallur and Sivagalai were concentrated on exposing the graves rather than habitation mounds, preventing the recording of a considerable number of graffiti sherds. Thus, the site Thulukkarpatti provides unique information on various cultural items, particularly graffiti sherds.

14. Uraiyur

Uraiyur (10°49'47" N; 78°40'50" N), a suburb of Tiruchchirappalli town, is one of the famous cities of ancient Tamil Nadu situated on the south bank of the river Kaveri. It was the capital of the early Cholas of the Sangam Age, known by many names such as Uraiyur, Urandai, Koliyur, Kojiyur, Uragapura, etc. The *Periplus* of the 1st century CE refers to the place as Argaru and calls it the capital of an inland district. Ptolemy's Orthura regia Sornati has been identified with the Uraiyur region of the Cholas. Sangam works such as *Akanāṉūṟu* and the *Puṟanāṉūṟu* contain copious references to this city and its political, commercial and religious importance, wherefrom we learn that it was a fortified city having a prosperous urban life. From ancient times, Uraiyur has been a centre of spinning and weaving of cotton and also perhaps of silk. The *Periplus* mentions it as a great centre of trade in fine cotton stuff. One of the poems in the *Akanāṉūṟu* vividly

describes the famous Urandai festival, whereas another poem mentions it as a place of the functioning of a famous assembly *sabha* known for its justice. In the 7th and 8th centuries CE, the city was the bone of contention between the Pallavas and the Pandyas. From about the beginning of the 10th century CE, it was part of the later Chola empire. In the 13th century, the city fell into the hands of the Pandyas. Maravarman Sundara Pandya I (1216-39 CE) invaded the Chola territory and caused extensive destruction to the city. After the decline of the Cholas, Uraiyur practically lost its political importance and later on got merged with the larger town of Tiruchchirappalli. As a suburb of a growing city, extensive vacant sites are not available for excavation. In the available space of five localities some 12 trenches were sunk (*IAR* 1964-65: 25-26; 1966-67: 30; 1967-68:30). The localities are: (1) open playground near the police station, (2) near the Selliachi Amman temple and (3) near Uraiyur water tank, (4) the ground near the Old Choultry and (5) near the Nada factory site. The excavations were conducted by the University of Madras between 1964 and 1968 (Raman 1988).

The excavations have yielded occupational deposits and cultural material belonging broadly to two Periods: Period-I, belonging to the first three or four centuries AD, and Period-II, to later times. Period-II can be subdivided into two phases A and B; the former can be roughly datable to the 5th to 10th centuries, and the latter can be regarded as late medieval. The division is mainly based on the occurrence of fairly datable pottery types. In Period-I certain known pottery types occur throughout such as the Black-and-red Ware and its associated black ware, the Russet-coated Painted Ware and the Rouletted Ware. The occurrence of the last two types would clearly indicate the Early Historic period. The find of a number of sherds with Tamil inscriptions points to more or less the same period. A long inscription mentions *antāṉaṉ* of *Mūlāṉpēdu*, probably meaning the Brahmana of Mulanpedu. But the other inscriptions are short and fragmentary. On palaeographical grounds and associated finds, they are datable to the first three centuries.

An important structure of Period-I is a brick-built dyeing vat found at a depth of 2-39 m in a trench in locality 2. It consists of one square and another rectangular chamber laid diagonally opposite each other. The square cistern measures internally 68 cm, and the rectangular one 48x35 cm, both having paved flooring. The bricks measure 43 x 23 x 7-6 cm. This structure has a close similarity to a dyeing vat excavated at Arikamedu. It is interesting to note that from ancient times to the present day, Uraiyur has been a leading centre of the handloom industry in s. India. In another trench in locality 1, an interesting array of post-holes on a peculiar plan, probably meant to erect an altar for some ritualistic purposes, had been laid bare. In another trench in the same locality, successive layers of rammed clay flooring laid one above the other, and the foundation level of a building laid with rubble,

brickbats and pottery pieces have been encountered. They give us an idea of the pattern of house construction and the materials used.

A large number of beads of coloured glass, shell, terracotta and semiprecious stones have been found in this period, a collared bead in soapstone being noteworthy. Some bone tools, like points and needles, evidently used in the weaving industry or as styli have also been recovered.

In some localities, vestiges of continuous occupation of Period-II have been found. In these deposits, two phases can be distinguished. A, roughly from the 5th to 10th centuries, and B, which is later. In the former, the survival of certain pottery traditions like the bright-red slipped ware can be detected, while the latter has coarse red ware and vessels of different utilitarian characters. Some Celadon ware pieces are also present. Among the minor antiquities in this Period-II are glass beads and bangles of black glass, besides those of semiprecious stones. Terracotta toys such as human figurines, gamesman, dice and ear ornaments.

15. Vallanadu - Agaram

The site Agaram (Lat. 8° 43' 22"; Long. 77° 50' 12"), popularly called Vallanadu-Agaram, is a small village located on the left bank of the perennial river Porunai (Tamiraparani) in Srivaikuntham Taluk, Thoothukudi district of Tamil Nadu.

The Archaeological Survey of India excavated the site in 2002-23, and two trenches were laid in the habitation mound noticed on the northern side of the village, having a 4 m cultural deposit of Medieval, Early Medieval, Early Historic and Iron Age. Overall, seven cultural phases have been noticed in the site. The top layers yielded red ware, and the bottom two layers constituted black-and-red ware, white painted black-and-red ware, brown ware, black polished ware and black ware, along with more than 490 sherds bearing Graffiti marks and Tamil̲i (Tamil-Brahmi) script.

This cultural phase (Period-I: Iron Age) met with black-and-red ware, white painted black-and-red ware, red slipped ware, and black polished ware of bowls, pots, dishes and lids are exposed. It yielded hopscotches, shell bangles, terracotta lamps and iron objects. A floor level with a hearth and a dump of burning ash with ceramics is found. Few graffiti marks are noticed in this phase (Fig. 2.126).

The second Early Historic (Period-II) phase met with a large number of graffiti-bearing potsherds and five Tamil̲i inscribed potsherds. Brown and red ware, black-and-red ware,

Fig. 2.126. Vallanadu-Agaram: Excavated trenches and antiquities

dull black-and-red ware, red ware, red slipped ware and dull black ware are found along with hopscotches, shell bangles and iron objects. Large quantities of cox beads were recovered from this layer. Two floor levels, along with lime plasters, are noticed in all the trenches.

The Early Medieval period (Period-III) was exposed with brownish-red ware, brownish-black ware, red ware and black ware. The Medieval period (Period-IV) yielded iron and glass slag. The brown slipped coarse ware was increased in number, and red ware with medium to coarse fabric was found. Two-floor levels are noticed with pots and burning materials.

In total, 449 graffiti-bearing potsherds, engraved mostly on black-red-ware and red slipped ware, are documented. The major signs are crossed lines, geometric circles, squares, triangular and zig-zag lines. These 449 graffiti marks recovered from merely two excavated trenches display their significance.

16. Pattaraiperumpudur

Pattaraiperumpudur (Lat. 13.15361 N; Long. 79.82388 E) is a small village that lies about 12 km from Thiruvallur on the right bank of the Kosasthalaiyar, also known as Korthalaiyaru (Kortallaiyar) or old Palar river. The Kortalaiyar river basin is known for Palaeolithic sites. More than 50 Palaeolithic sites such as Attirampakkam, Poondi (Pundi), Vadamadurai, Neyveli, Parikulam, Sendrayanpalayam and Gudiyam caves were identified on this river bed (Banerjee 1963-64:17-19; 1964-65:20-22; Pappu *et.al*. 2004:1-17; 2010c; Gurumurthi 2006). Since the first discovery of a Palaeolithic stone tool in India by Robert Bruce Foote in 1863 at Pallavaram, and subsequently at Attirampakkam in northern Tamil Nadu (Foote 1866:1-35, 1873, 1916a-b; Pappu, 1991:647-654), the study is focused by various research groups primarily in the basins of the rivers Kortallaiyar and Arani, leading to the discovery of numerous prehistoric sites and several of them were excavated (Banerjee 1969:20-22; Jayaswal 1978, 1985:73-76; Krishnaswami 1938a:58-90, 1938b:32-35, 1947:53-79; Paterson 1939:327-330; Swami, 1976; Gurumurthi 2006). Of the numerous sites in this region, several are in the process of ongoing intensive research and excavations, including Attirampakkam and Sendrayanapalayam (Tiruvallur district) (Akhilesh *et. al*. 2018:97-101; Blackwell *et. al*. 2007:1243-1249; Gunnell *et. al*. 2006:114-118; Pappu and Akhilesh 2006:155-180, 2019:109-125; Pappu *et. al*. 2003:591-597, 2004:1-17, 2011:1596-1599, Premathilake *et. al*. 2017:479-499; Sreedhar *et. al.* 2008:779-786; Warrier *et. al*. 2011:3681-3693). The two decades of explorations and subsequent excavations conducted at Attirampakkam since 1999 exposed Acheulian artefacts (Pappu *et.al.,* 2011:1596-1599). The paleomagnetic measurements and direct26Al/10Be burial dating methods (Cosmogenic nuclide) placed the

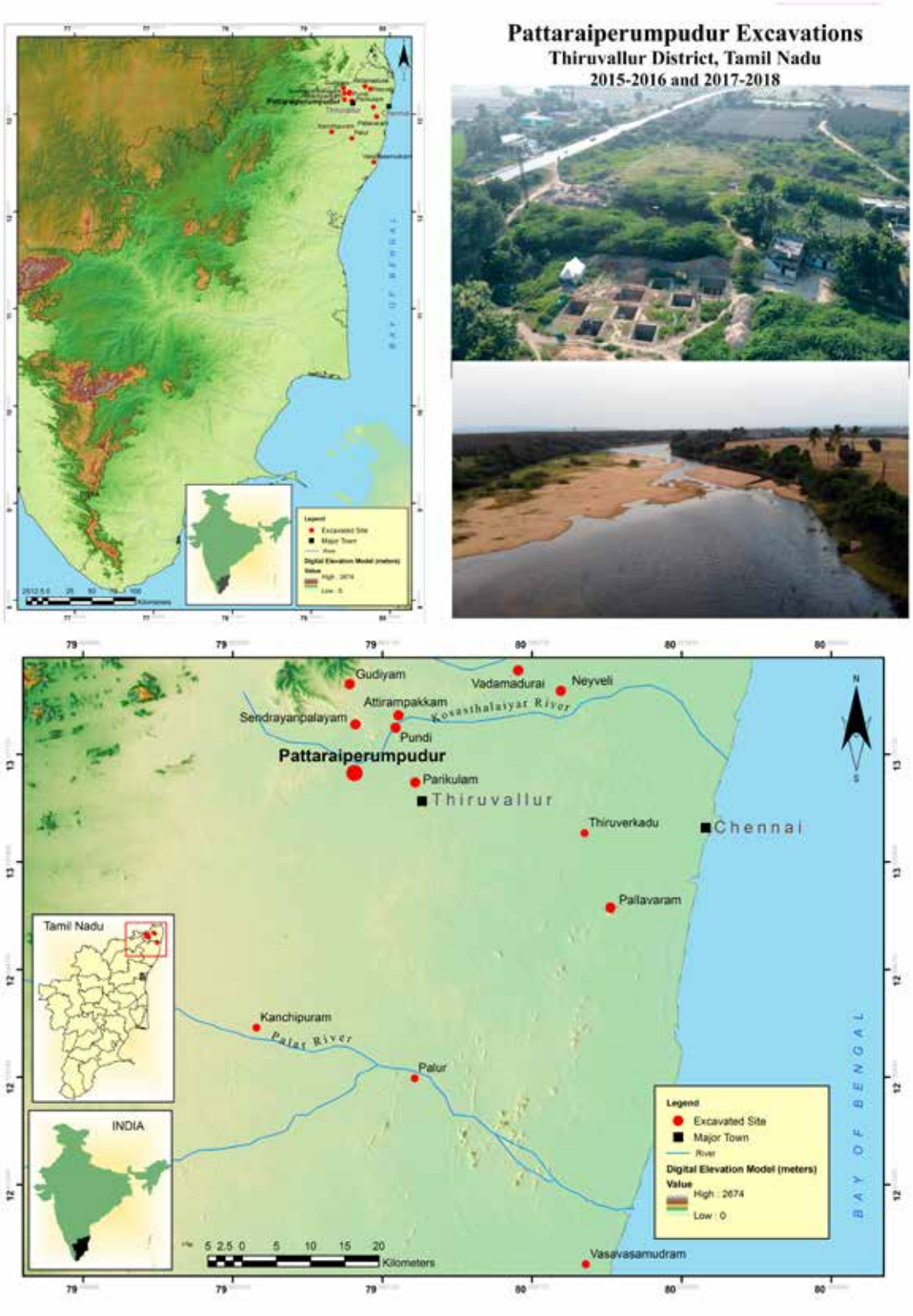


Fig. 2.127. Pttaraiperumpudur: Location of excavated site

earliest Acheulian artefacts yielding cultural layers to 1.07 million years ago (Ma), with a pooled average age of 1.51 Ma. The similar assemblage observed at Pattaraiperumpudur and that could also be safely placed in the same time bracket of Attirampakkam (Fig. 2.127).

Pattaraiperumpudur provided a cultural continuity from Palaeolithic times down to Early Historic times with some cultural gaps. This multi-cultural site provided evidence of Middle Palaeolithic, Upper Palaeolithic, Microlithic, Iron Age and Early Historic cultural phases. The archaeological vestiges were recovered in the ancient mounds, namely *Āṉaimēḍu, Nattamēḍu, Iruḷaṉtōppu* and partly in the premises of the Siva temple. The mound *Āṉaimēḍu* lies in the midst of the cultivated dry land to the southern side of the Subramanya temple. *Nattamēḍu* is located close to this mound. *Iruḷaṉtōppu* mound is situated on the western side of the village. The Siva temple (*Eswaraṉkōil*) lies on the northern side of the village. The site was first brought to light by D.Tulasiraman of the Tamil Nadu State Archaeology Department in the year 2002, and it was again explored in 2013-14 to re-assess its potentiality. The exploration yielded Stone Age tools, Iron Age ceramics and Early Historic material.

Excavations

Keeping in view of its archaeological wealth covering a wider cultural period, excavations were conducted in two seasons at three localities in the years 2015-16 and 2017-18. The four mounds were divided into three localities. Based on the cultural material, the site was divided into five cultural periods, namely, Middle Palaeolithic (Period-I), Upper Palaeolithic (Period-II), Microlithic (Period-III), Iron Age (Period-IV) and Early Historic (Period-V). The cultural periods are divided on the basis of Stone Age tools, Iron Age potteries such as black-and-red ware, Tamiḻ-Brāhmī inscribed sherds, copper coins, rouletted ware, russet coated painted ware and associated artefacts.

The cultural material unearthed in the excavation is consolidated in the following lines. Middle Palaeolithic tools, consisting of hand axes, points, scrapers and discoids, were unearthed from the dark red loam mixed with patches of shale in the lowermost cultural deposit. Upper Palaeolithic tools such as parallel blades and core tools were recovered from reddish grey (weak red) to medium to light grey loam mixed with white and yellow nodules but predominantly with sand (Fig. 2.128). Microlithic tools like scrapers, points, blades, crescents, lunates and borers are found *in situ* in the midst of the dry coarser sediments mixed with relatively rare pebbles. Microlithic tools made of chert, chalcedony and quartz were collected. There is a cultural gap between the Microlithic and Iron Age phases. Although the excavator collected more than 14 Neolithic celts made of dolerite and basalt, there is hardly any other Neolithic material to suggest its existence. The absence of the Neolithic phase

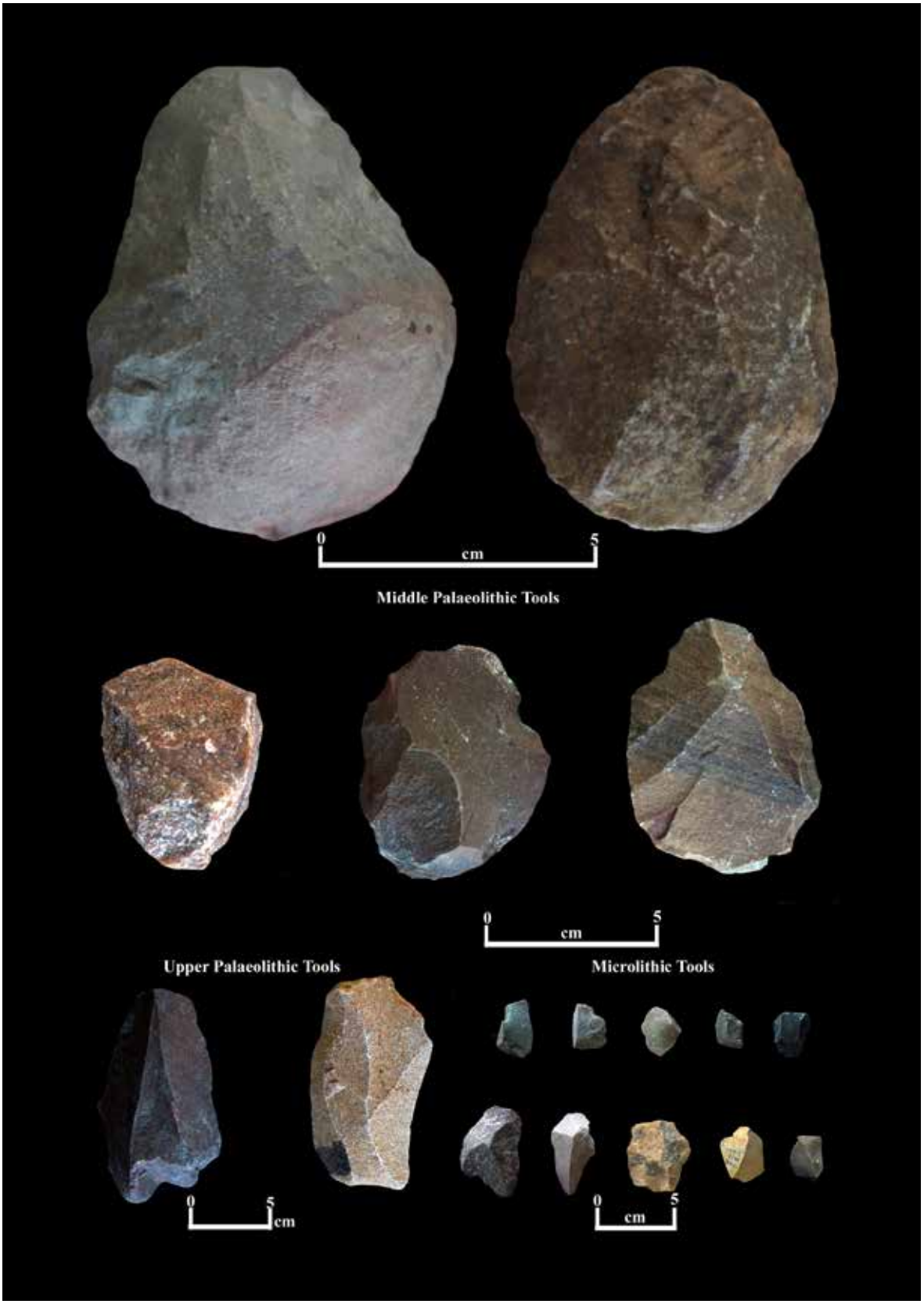


Fig. 2.128. Pattaraiperumpudur: Stone tools recovered from excavated trenches

suggests that the site was deserted for some time before being occupied again. However, stone objects such as grinding stones, rubbing stones, stone weights, whet stone, pestle pounding stone, muller, sling ball, quern (broken), hopscotch made of stone and unidentified stone objects in a few numbers were recovered in subsequent cultural contexts. The cultural transformation of the Iron Age into an Early Historic phase could be witnessed without any cultural break.

In the Iron Age phase, a fine variety of black-and-red ware, black polished ware, and black ware and considerable numbers of graffiti marks were recovered. More than five hundred potsherds engraved with graffiti marks such as fish, leaf, wavy lines, single or double U-shaped symbol, ladder and spiral designs were recovered (Fig. 2.129). Among the pottery types, black ware, black-and-red ware, and red ware carry the maximum number of graffiti marks.

The Early Historic phase yielded a larger number of coarse to medium fabric of red ware, coarse black-and-red ware, russet coated painted ware, rouletted ware, a few numbers of polished red ware, coarse black ware, black polished ware and black ware. The major shapes are storage vessels, conical vessels, miniature pots, goblets, dishes, bowls, lids, ring stands, funnels, pans, conical jars, pots with spouts and miniature pots (Figs. 2.130-131). A considerable number of potsherds having decoration in the form of paintings, engravings, incised patterns, comb designs, thumb impressions, finger-nail impressions, mat impressions, leaf patterns, cord designs, herring bone patterns, crisscross lines, pinched designs and other appliqué designs are common decorations in the potteries. Coarse red ware and red ware pottery types have more decorations compared to other pottery types. A good number of conical jars that look like handless amphorae were unearthed in the excavation. In one of the trenches, 12 conical jars were placed horizontally in a row (Fig. 2.132). The other notable antiquities found in this level include glass beads, semi-precious stone beads of plain and etched carnelian, agate, faience, quartz, crystal, soapstone and amethyst terracotta figurines, ivory objects, grinding stones, rubbing stones, pestles, whetstones, spindle whorls, gamesmen, lamps, hopscotches, shell bangles, copper objects such as pendants, fish hook, antimony rod, iron objects, roofing tiles, coin moulds, dabbers and bone points (Fig. 2.133). Terracotta objects such as hopscotches, weights, beads, wheels, gamesmen, spindle whorls, ear lobes, seals, moulds, sling balls, human figurines, dabbers and some unidentified objects were collected from the excavation. The occurrence of a spindle whorl pierced with an iron needle indicates the extraction of cotton thread. An ivory comb with a semi-circular head with blunted, narrow teeth is an interesting object. Among the human figurines, one human head is prominent. A torso figure in a small size was also found. The excavation yielded ceramics such as coarse red ware, red ware, red slipped ware, red polished ware, black-and-red ware, black ware, black slipped ware, black polished ware, russet coated painted ware,

Fig. 2.129. Pattaraiperumpudur: Graffiti inscribed potsherds and painted potsherds

Fig. 2.130. Pattaraiperumpudur: Spouted and funnel-shaped pots

Fig. 2.131. Pattaraiperumpudur: Early Historic pots

Fig. 2.132. Pattaraiperumpudur: Conical jars recovered from excavated trenches

Fig. 2.133. Pattaraiperumpudur: Antiquities recovered from excavated trenches

Fig. 2.134. Pattaraiperumpudur: Brick and Terracotta ring-wells

rouletted ware, grey ware and buff ware. A unique find is a conical jar with 20 perforations on the surface of the body. Two terracotta ring-wells, one in good condition and another in disturbed condition, were exposed (Fig. 2.134).

Inscribed potsherds

More than five hundred potsherds engraved with graffiti marks such as fish, leaf, wavy lines, single or double U-shaped symbol, ladder and spiral designs were recovered. These post-firing scratches were made mostly on the exterior surface of the pot, mostly on the shoulder portion of the pot. Among the pottery types, black ware, black-and-red ware, and red ware carry the maximum number of graffiti marks. Besides graffiti bearing sherds, fourteen Tamiḻ-Brāhmī inscribed potsherds were unearthed from the excavation. Like graffiti, all were post-firing in nature and engraved mostly on the shoulder portion of the exterior surface of the pot. These were engraved mostly on dishes, bowls and pots of red slipped ware and black-and-red ware. The inscribed sherds contain one to four letters. Nine sherds have just a letter reading ta, ri, ko, ū-ra, ma and [ta]-ṉ-ma-ṇ. The interesting phenomenon to be observed with regard to the inscribed potsherds is that the graffiti marks appeared more in number at lower levels of the Early Historic period, and their number of occurrence goes down once the Tamiḻ-Brāhmī inscribed potsherds started appearing, thereby indicating some connection between the graffiti and Brahmi.

17. Karur

Karur, the district headquarters, is located on the left bank of the river Amaravathi (Ān-porunai) close to the confluence of the river with the river Kaveri. It served as the capital city of the Sangam Age Cheras and remained an important political centre in medieval times, also. The Iron Age sites such as Somur, Nerur, Thirumukkudalur, Porani and Attur, located within a 5 km radius of Karur, suggest the strong presence of Iron Age culture at Karur. An urn collected near Āndankoyil within Karur town is presently displayed in the Government Museum (Fig. 2.135). The Sangam literature *Padiṟṟuppattu*, *Puṟanāṉūṟu* and *Akanāṉūṟu* and the post-Sangam epics *Slippadikāram* and *Maṇimēkalai* give vivid accounts of Karur as Karur-Vañji and its association with Chera kings. The famous Puhalur site carrying twelve Tamiḻi inscriptions engraved on the hillock Arunattarmalai provided a genealogy of the three Chera kings, namely *Ātaṉ Cel-Irumpoṟai, Peruoṅkaṭuṅkō* and *Iḷaṅkaṭuṅkō,* which were first brought to light in 1927 (ARE 1927-28:342-349).

In 1806, Roman coins issued during the regimes of Augustus, Tiberius, Antonia and Claudius were reported at Karur (Elliot 1844:121-214; Sewell 1882:221; Little

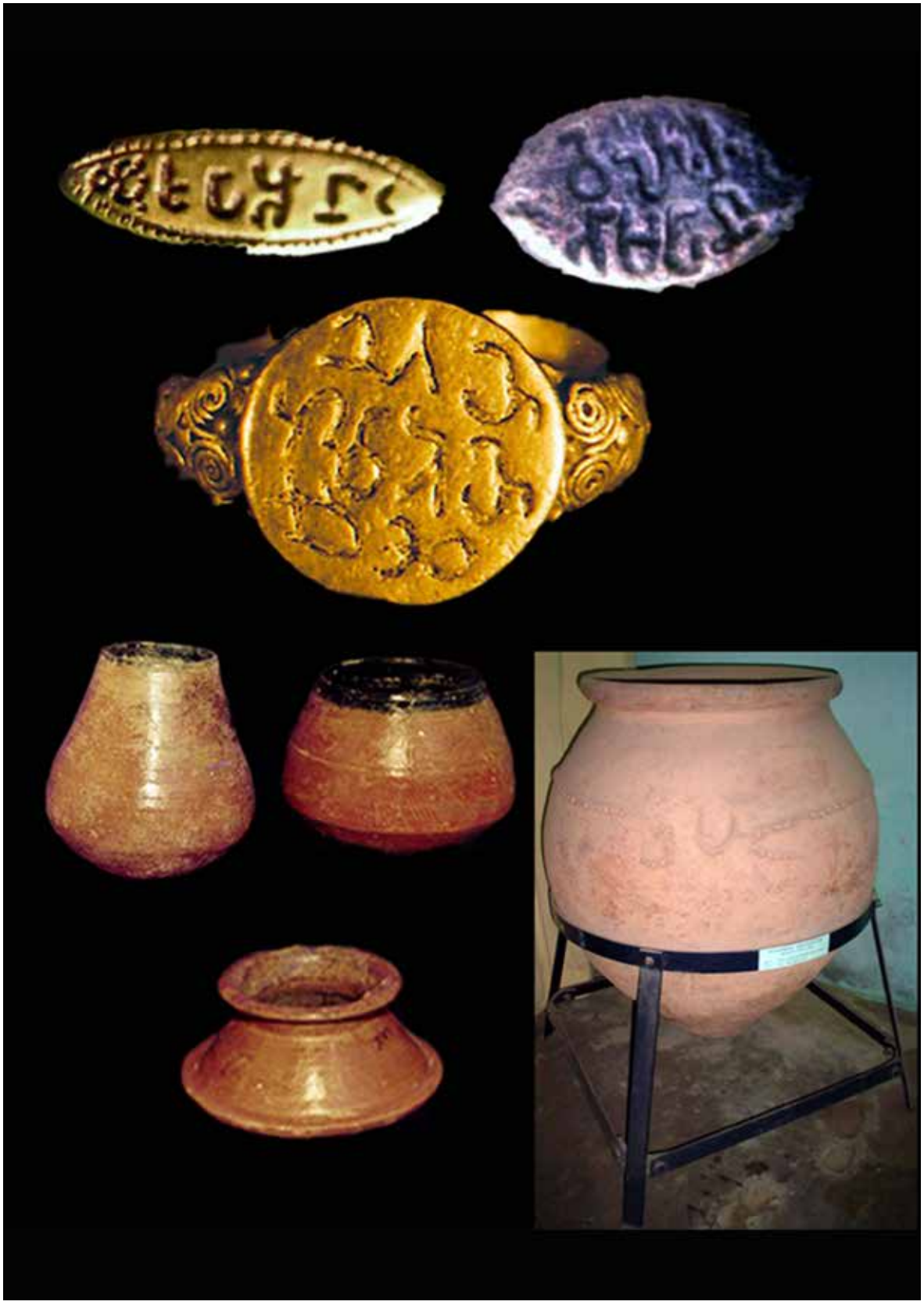


Fig. 2.135. Karur: Tamiḻi inscribed gold rings, pots and urn bearing graffiti marks

1883:338). In 1981, Nagasamy reported Chera coins in Karur (Nagasamy 1995:63-65). R. Krishnamurthy reported Sangam Age Chera coins in Karur (Krishnamurthy 1987:36-38). Paula Turner reported a Roman coin in 1989 (Turner 1989:58). In 1992, R. Krishnamurthy reported for the first time an inscribed Chera coin reading *Mākkōtai* coin in Karur (Krishnamurthy 1992:89-93). In 1994, Seetharaman collected a copper ring with graffiti marks from Karur (Seetharaman 1994:86-87). In 2001, P. Vijayaraghavan reported a silver punch-marked coin from Karur (Vijayaraghavan 2000:28-31). Most of the coins were purchased from the riverbed. These purchases are being made even today on the banks of the river Amaravathi. Except for one or two, hardly any coin comes from any archaeological stratigraphy. Due to the nature of the occurrence of these coins, one finds it difficult to place them in a proper cultural context.

To ascertain the validity of the literary references and other archaeological, epigraphical and numismatic evidence, a systematic spade work was carried out in the years 1973-74, 1977, 1979 and 1996 by the State Archaeology Department (Nagasamy 1995:63-85; Sridhar 2011). In total, nine trenches were laid within the city limits of Karur at the following five locations:

1. Jaiprakash Elementary School Ground (KRR 1&2 in the year 1973-1974)
2. CSI High School Ground (KRR-3 in the year 1977)
3. Taluk Office Ground (KRR-4 in the year 1977)
4. Boys High School Ground near the Pasupathi Temple (KRR-5 in the year 1979)
5. Girls High School Ground (KRR-6 in the year 1979)
6. Industrial Training School Campus (KRR-7 in the year 1996)
7. Amaravathi river bank (KRR-8 in the year 1996)
8. In the vacant land between Jaiprakash Elementary School Ground and
9. Mariamman koyil (KRR-9 in the year 1996)

The trenches laid at Jaiprakash School ground and the Girls High School ground stand for the maximum cultural deposit measuring 4.52 m and 5.25 m respectively. The excavator states that the site had its beginning in the black-and-red ware period and continued to prosper up to the medieval times without any break. Four major cultural divisions designated as period I, II, III and IV revealed the following cultural sequences.

The early settlers, using the typical black-and-red ware pottery, arrived at the site around the 2nd century BCE (Plate 3.01). The excavator identified this period as a Pre-Christian era

deposit, having no signs of Roman contact. The next cultural period (Period II) witnessed the efflorescence of external trade and the influx of important pottery assemblages like the Rouletted ware and Amphorae. Three fragments of Arretine ware are also stated to have been collected from the surface. The occurrence of inscribed potsherds ascribable to Period II shows that a section of the society was literate enough to display their writing skills on their belongings. The inscribed potsherds were found at a depth of 3.85 m (Jaiprakash School), 2.75 m and 1.85 m (Girls High School).

Except for that of a sherd with letters inscribed over a red slipped ware (Plate 3.02), all other sherds were found to be inscribed on black-and-red ware only. It is worth noting that an inscribed black-and-red ware sherd with letters reading *cātaṉ* was found in the stratum that yielded Roman amphorae. The rest of the sherds found in the excavation were highly fragmentary. Two sherds found in the upper (?) levels had the reading as *kati* (1.85m) and *irkup* (2.75m). Some of the surface collections made at the site also contained inscribed sherds. An inscribed sherd of red slipped ware had the reading *kuru kkal,* meaning the little cup. The excavator assigned it to 2nd-3rd cent. CE on the basis of palaeography.

The pottery assemblage of this period consisted of black-and-red ware, red slipped ware and mat-designed sherds. The stratified occurrence of a square copper coin with an elephant on the obverse and a bow and arrow on the reverse deserves to be mentioned here. The coin with such symbols indicating the royal insignia of the Cheras was the first of its kind to occur at Karur in a stratified context. A highly corroded silver Roman coin found in the upper levels (Taluk office 0.52m) perhaps indicates the survival of external trade activities. The occurrence of imported pottery, inscribed shreds and coins on the whole has been dated to 1st -2nd cent. CE.

In Period III, one could observe a change in the pottery variety in the form of russet coated ware dated to 3rd - 4th cent. CE. Except for the passing reference to the pottery, the report hardly provides any details about other aspects of the period. Further, assigning the period of russet coated ware to the 4th cent. CE did not match with other archaeological sites excavated in this region.

The subsequent Period IV saw the gradual disappearance of the earlier pottery types and, in turn, was replaced by a single dominant variety, namely the coarse red ware. An insignificant, dull red ware was its associated variety. The excavation also showed some architectural remains in the form of brick flooring or pavement and a drain with an adjoining brick structure. The bricks measure 26x16x4 cm (Nagasamy 1995; *SII* 3:20-22).

Besides, several important antiquities with Tamiḻ-Brāhmī script were recovered from the Amaravathi river bed by the coin collectors. Most of them were coins, rings and seals inscribed with Tamiḻ-Brāhmī. Nearly thirteen objects belonging to the 1st century BCE were recovered. Of these, eight are gold rings, four are silver rings, and the remaining one is a silver seal. The rings carry personal names like *tiyaṉ, mittraṉ, upācaṉ, ariamāṉ, antikaṉ, vēḷicampaṉ,pēravataṉ, bhava-tatta-sa and brahma-saharsa*. The seal with symbols like *Srivatsa* carries the name *kuṟavaṉ.*An inscribedpotsherd datable to the 1st century CE reading *[a]r[i]yati-yaya marai-y ayai pā[ti]*, a vessel of Marai Ayyai, (wife/daughter?) of [A]riyati Ayya[ṉ] is recovered. Circular coins reading *Kollippoṟai, Kuṭṭuvankōtai, Makkōtai* and *Makōkōtai* are also recovered. A gold ring of the 2nd century CE with the reading *Nalveḷḷaisa (nal-veḷḷai-sa)* is also collected from the Amaravathi river bed.

Chapter-3

METHODS AND MATERIALS

METHODS AND MATERIALS

In Tamil Nadu, 140 archaeological sites, both explored (86) and excavated sites (55), yielded graffiti-bearing potsherds and 47 sites met with Tamiḻi (Tamil-Brāhmī) inscribed potsherds. In total, 16754 inscribed sherds (15184 Graffiti and 1570 Tamiḻi inscribed potsherds) were documented. The availability of inscribed sherds is increasing every day as the archaeological excavations and explorations are in progress at many places and are being carried out by various institutions such as Tamil Nadu State Department of Archaeology, Archaeological Survey of India, Madras University and Tamil University.

More than 14168 graffiti-bearing potsherds were documented out of 15184 sherds to understand the quantum of the data. Due to the paucity of time and availability of potsherds for documentation, 39 sites alone were documented out of 140 sites and these were restricted to the sites from Tamil Nadu irrespective of their availability in entire peninsular India (Fig. 3.1). If one looks into the accumulated data, the maximum number of inscribed potsherds came from Thulukkarpatti (4797), Kodumanal (2632), Keeladi (2132) Perumbalai (1028) and Adichchanallur (932). It accounts for 11521 sherds constituting more than 75%. If one considers the availability of more than a hundred sherds, it accounts for another ten sites (2926 sherds) and both constitute 95% (14447 sherds). Out of 14165 documented sherds, 9619 sherds are recognised and the remaining 4546 sherds are unrecognised (Table 3.1). The examination of signs such as the identification of base signs, variants of base signs and composite signs, morphological comparison, preparation of concordance, statistical analysis and others have been carried out from recognised graffiti inscribed sherds.

Table 3.1. Number of recognised and unrecognised graffiti-bearing sherds

S. No	SITE	District	No. of Sherds	No. of Sherds documented	Recognised Sherds	Un-recognised Sherds	Total
1	Adichanallur	Thoothukudi	932	932	351	581	932
2	Akara-oratur	Nagapattinam	3	0	0	0	3
3	Alagankulam	Ramanathapuram	376	376	280	96	376
4	Alagapuri	Sivagangai	1	0	0	0	0
5	Alagarai	Tiruchirappalli	58	0	0	0	0
6	Alangamadai	Theni	1	0	0	0	0
7	Amanakkampatti	Trichy	1	0	0	0	0
8	Ambal	Nagapattinam	1	1	0	1	1
9	Amur	Chengalpattu	1	0	0	0	0

S. No	SITE	District	No. of Sherds	No. of Sherds documented	Recognised Sherds	Un-recognised Sherds	Total
10	Andippatti	Tiruvannamalai	3	0	0	0	0
11	Anukkanattam	Tiruchirappalli	1	0	0	0	0
12	Appukallu	Vellore	4	4	3	1	4
13	Aranthangi	Pudukkottai	1	0	0	0	0
14	Arcot	Ranipet	7	0	0	0	0
15	Arikamedu	Pondicherry	8	0	0	0	0
16	Ariya Nattam	Kallakurichi	15	15	15	0	15
17	Arungkurukaipudur	Kallakuruchi	1	0	0	0	0
18	Avudaiyarkoil	Pudukkottai	1	0	0	0	0
19	Balakrishnapuram	Thanjavur	1	0	0	0	0
20	Chettimedu	Mayiladuturai	4	4	4	0	4
21	Chittakkattur	Karur	1	0	0	0	0
22	Durairajapuram	Theni	1	0	0	0	0
23	Edaiyarpalaiyam	Coimbatore	1	0	0	0	0
24	Elavamalai	Erode	1	0	0	0	0
25	Enadi	Sivaganga	1	0	0	0	0
26	Enampakkam	Tiruvallur	1	1	1	0	1
27	Ilayankudi	Sivagangai	1	0	0	0	0
28	Kalapatti	Coimbatore	1	0	0	0	0
29	Kaliyandur	Sivaganga	1	0	0	0	0
30	Kaliyapanallur	Nagapattinam	1	0	0	0	0
31	Kanchipuram	Kanchipuram	15	15	13	2	15
32	Kandiyur	Karur	1	0	0	0	0
33	Kaniyampundi	Tiruppur	1	0	0	0	0
34	Karur	Karur	217	217	134	83	217
35	Keeladi (ASI 797 + TNSDA 1335)	Sivaganga	2132	2132	1604	528	2132
36	Kilnamandi	Tiruvannamalai	103	103	97	6	103
37	Kodumanal (TNSDA 2034 + TU-PU598)	Erode	2632	1955	1287	668	1955
38	Kokkarasan Kottai	Ramanathapuram	1	0	0	0	0
39	Komalikadu	Salem	1	0	0	0	0
40	Kondagai	Madurai	1	0	0	0	0
41	Kongalnagaram	Tiruppur	298	298	218	80	298
42	Korkai	Thoothukudi	422	422	261	161	422
43	Koththamangalam	Villupuram	30	30	28	2	30
44	Kottaimedu	Salem	1	0	0	0	0
45	Kottampalayam	Namakkal	1	0	0	0	0

S. No	SITE	District	No. of Sherds	No. of Sherds documented	Recognised Sherds	Un-recognised Sherds	Total
46	Kotthanur	Tiruppur	1	0	0	0	0
47	Kovalanpottal	South Madurai	1	0	0	0	0
48	Kudalur	Theni	1	0	0	0	0
49	Kudumiyanmalai	Pudukkottai	1	0	0	0	0
50	Maharajapuram	Thanjavur	1	0	0	0	0
51	Maligaimedu	Cuddalore	1	0	0	0	0
52	Mallapadi	Krishnagiri	1	1	0	1	1
53	Mallingapuram	Teni	1	0	0	0	0
54	Mangadu	Salem	1	0	0	0	0
55	Mangalanadu	Pudukottai	1	0	0	0	0
56	Mangudi	Tenkasi	152	152	134	18	152
57	Mangulam	Madurai	42	42	33	9	42
58	Marungur	Cuddalore	1	0	0	0	0
59	Mathagam	Pudukkottai	6	6	4	2	6
60	Mayiladumparai	Krishnagiri	1	1	0	1	1
61	Mela Sindalachery	Teni	1	0	0	0	0
62	Melaikkudi	Ramanathapuram	1	0	0	0	0
63	Melakarantai	Thoothukudi	1	0	0	0	0
64	Melsittamur	Villupuram	2	2	2	0	2
65	Mettupatti	Madurai	1	0	0	0	0
66	Milalainattam	Thanjavur	1	0	0	0	0
67	Modur	Dharmapuri	5	0	0	0	0
68	Mondippatti	Tiruchirappalli	1	0	0	0	0
69	Mottur	Vellore	1	0	0	0	0
70	Mudrapalayam	Puducherry	1	0	0	0	0
71	Muthupatti	Madurai	1	0	0	0	0
72	Mutukkankulam	Virudhunagar	1	0	0	0	0
73	Nallur	Tiruchirappalli	1	0	0	0	0
74	Nalur	Virudhunagar	1	0	0	0	0
75	Narayanadevanpatti	Theni	1	0	0	0	0
76	Nariyutthu	Theni	1	0	0	0	0
77	Nattam	Tirunelveli	1	0	0	0	0
78	Nedungur	Karur	79	79	71	8	79
79	Nerur	Karur	1	0	0	0	0
80	Nochchiyam	Perambalur	1	0	0	0	0
81	Odugattur	Vellore	1	0	0	0	0
82	Omalur	Selam	1	0	0	0	0
83	Palur	Cuddalore	1	1	1	0	1
84	Parikkal Nattam	Kallakurichchi	40	40	39	1	40

S. No	SITE	District	No. of Sherds	No. of Sherds documented	Recognised Sherds	Un-recognised Sherds	Total
85	Pattaraiperumpudur	Tiruvallur	532	532	376	156	532
86	Perumpalai	Dharmapuri	1028	1028	940	88	1028
87	Perur	Coimbatore	1	0	0	0	0
88	Pidariyendal	Paramakudi	1	0	0	0	0
89	Ponnagani	Coimbatore	1	0	0	0	0
90	Poompuhar	Mayiladuturai	45	45	29	16	45
91	Porunthal	Dindigul	97	0	0	0	0
92	Puduppatti	Theni	1	0	0	0	0
93	Punaiyankudiyiruppu	Pudukkottai	1	0	0	0	0
94	Ramasamypuram	Pudukottai	1	0	0	0	0
95	Salamedu	Villupuram	8	8	6	2	8
96	Sambalmedu	Theni	1	0	0	0	0
97	Sandaiyur	Dindigul	1	0	0	0	0
98	Sanur	Chengalpattu	1	0	0	0	0
99	Sembiyankandiyur	Nagapattinam	3	3	0	3	3
100	Sendamangalam	Villupuram	11	11	6	5	11
101	Sengottai	Thoothukudi	1	0	0	0	0
102	Senjikuppam	Villupuram	1	0	0	0	0
103	Senppaeratti	Karur	1	0	0	0	0
104	Siruthavur	Chengalpattu	1	0	0	0	0
105	Sivagalai	Erode	150	150	104	46	150
106	Sivagiriammankoyil	Erode	1	0	0	0	0
107	Sulapuram	Madurai	2	0	0	0	0
108	Sulur	Coimbatore	1	1	0	1	1
109	Suttukkeni	Puducherry	1	0	0	0	0
110	T. Karungulam	Ramanathapuram	1	0	0	0	0
111	T.Kalluppatti	Madurai	1	0	0	0	0
112	Tennur	Mayiladuthurai	1	0	0	0	0
113	Teriruveli	Mayiladuthurai	227	227	188	39	227
114	Thamaraikulam	Dindigul	15	15	0	15	15
115	Thelunganur	Salem	4	4	0	4	4
116	Thirunathamkonram	Kallakurichi	2	2	2	0	2
117	Thiyagadurugam	Kallakuruchi	1	0	0	0	0
118	Thulukkarpatti	Kallakurichi	4797	4797	2909	1888	4797
119	Tirukkampuliyur	Karur	9	9	8	1	9
120	Tirukkolur	Thoothukudi	1	0	0	0	0
121	Tirukkovilur	Tirukkovilur	14	14	5	9	14
122	Tiruvamattur	Villupuram	1	0	0	0	0
123	Tiruvarur	Tiruvarur	1	0	0	0	0

S. No	SITE	District	No. of Sherds	No. of Sherds documented	Recognised Sherds	Un-recognised Sherds	Total
124	Tiruverkadu	Tiruvallur	1	1	0	1	1
125	Tiruverumbur	Trichy	1	0	0	0	0
126	Tiruvidaikazhi	Tarangampadi	1	0	0	0	0
127	Tittai	Mayiladuthurai	1	0	0	0	0
128	Uraiyur	Trichirapalli	71	0	0	0	0
129	Usur	Vellore	1	0	0	0	0
130	Uttukkadu	Theni	1	0	0	0	0
131	Valasai	Vellore	37	37	16	21	37
132	Vallam	Thanjavur	2	0	0	0	0
133	Vallanadu-Agaram	Thoothukudi	449	449	449	0	449
134	Vellalur	Coimbatore	2	2	0	2	2
135	Vellar	Salem	1	0	0	0	0
136	Vembakkottai	Virudhunagar	1	0	0	0	0
137	Veppathur	Thanjavur	1	0	0	0	0
138	Vidoor	Virudhunagar	1	1	1	0	1
139	Vinnamangalam	Tiruvannamalai	1	0	0	0	0
140	Viralur	Pudukkottai	1	0	0	0	0
			15184	14165	9619	4546	14168

The availability of a large number of graffiti sherds from a particular site is due to the long spell of the excavation programme, the area involved in the excavation and the nature of the settlement. For instance, Kodumanal was excavated in 12 seasons in the years between 1988 and 2018 by the Tamil University, Pondicherry University, Tamil Nadu State Archaeology Department and Archaeological Survey of India, and the total excavated area comes to around 3075 sq m, and it constitutes about 19.21% of the 16-hectare habitation mound. It yielded 2632 graffiti-bearing sherds. In the case of Keeladi, the excavation was carried out in nine seasons and still it is being excavated (10th season in progress-2024) and it met with 2132 sherds. Besides the total area exposed in a particular site, the availability of the graffiti sherds is subject to the cultural context. For instance, the site Perumbalai was excavated for only one season in the year 2022, and the total area excavated is merely 475 sq m, constituting 1.58% of the total 30 hectares (74 acres) of the habitation mound. It yielded 1028 graffiti-inscribed potsherds. In the same way, the site Thulukkarpatti yielded 4797 graffiti-bearing potsherds from a limited excavation of two seasons carried out in 12 hectares of habitation mound (29.65 acres) by laying 35 trenches constituting 7.29% of the settlement. For instance, merely 4425 sq m area was excavated out of 58,000 sq m settlement from the above three sites, constituting 7.62%. It yielded 7957 graffiti-bearing sherds, amounting to

1.8 sherds per sq m excavated area. The exposure of entire settlements of these three sites alone would give more than one lakh sherds. One may imagine the volume of sherds one may get if one excavates the entire Iron Age and Early Historic sites of Tamil Nadu, it could easily cross millions. This rough hypothetical estimate provides the nature of the literacy or communication system that existed in ancient Tamil Nadu.

A large number of graffiti-bearing sherds generally occur in the pre-Tamiḻi (Brāhmī) level or Iron Age level, and their availability started diminishing once the Tamiḻi inscribed potsherds started appearing. Kodumanal, Vallam, Terriruveli and Keeladi evidence clearly demonstrated this phenomenon. In the same way, the availability of inscribed potsherds also has some bearing on the nature of settlement. In rural settlements, the number of graffiti-bearing potsherds is less when compared with urban/industrial sites. There is another dimension to the availability of these sherds. Some of the excavations were concentrated only in Iron Age and Early Historic graves rather than habitation. The sites such as Sanur, Kunnattur, Adichanallur, Porunthal, Thandikudi and Sivagalai could be cited as an example. The graffiti marks encountered in graves were restricted to three to four signs, whereas in habitation cuttings, a variety of graffiti marks were unearthed. For instance, the number of signs encountered in graves at Kodumanal, Porunthal, Sanur, Kilnamandi and Suttukeni was restricted to three to four signs, whereas in habitation trenches, more than a thousand inscribed potsherds were met with. Further, one may get hundreds of pots in a particular grave, but all the pots carry just one or two identical signs. Therefore, the total number of inscribed potsherds collected from a grave may be so high, crossing hundreds, whereas the number of signs available is restricted to a few. There is a methodological issue concerning the non-availability of the inscribed potsherds. In the initial stages of research, the excavators did not pay much attention to cleaning and analysing the ceramics, particularly in the excavations conducted before the 1990s, leading to the collection of a smaller number of graffiti-bearing sherds. Therefore, much care is taken in understanding various factors that are involved in explorations, excavations and documentation. Thus, the occurrence of graffiti-bearing potsherds and the quantity of the potsherds are subject to the size of the excavated area, cultural deposit, cultural context and the methodology followed in the documentation.

Besides the material available with major institutions such as the Tamil Nadu State Department of Archaeology, Archaeological Survey of India and Universities, great efforts were made to visit the museums and individuals to document the inscribed potsherds in their possession. Nearly 90% of them are unpublished material, and these specimens are being documented and published for the first time. Wherever the original materials are not available or access is restricted, the data is gathered from published material. The data on more than 100 sites were collected from published material. Some of the sites yielded several inscribed

potsherds but were merely reported with occurrences of graffiti sherds without mentioning the number of sherds or context. Thus, out of 140 sites, merely 30 sites have full data, and the remaining more than a hundred sites were reported/documented with one or two sherds for want of information.

The above phenomenon is also applicable to Tamiḻi (Tamil-Brāhmī) inscribed potsherds. A large number of Tamiḻi inscribed potsherds were unearthed in capital cities, port towns and trade centres where the economic or commercial activities are so high, leading to the usage of writing material on a larger scale as a part of a communication system. The occurrence of a large number of inscribed potsherds is directly proportional to the greater trading activities or community interactions. The trade is accelerated due to the technology-driven industrial activities, leading to vibrant community interactions. The gemstone, copper, iron, steel, shell, textile and other industries exposed at Kodumanal perhaps led to commercial interactions with many parts of India that might have necessitated the usage of the script on a large scale. The occurrence of 2632 graffiti-bearing potsherds and 734 Tamiḻi inscribed potsherds at Kodumanal could be attributed to such factors. At the same time, the sites Thulukkarpatti and Perumbalai yielded a large number of graffiti sherds where one could not identify any large-scale industrial or commercial activities. These sites are located on the trade routes that might have played a significant role. Thus, various factors played a dominant role in the availability of graffiti-bearing sherds. Therefore, well-planned and target-oriented excavations in future covering a wider geographical area may give a better picture of these unsettled issues.

Tamiḻi (Tamil-Brāhmī) inscribed potsherds

The documentation of Tamiḻi (Tamil-Brāhmī) inscribed potsherds was undertaken both from explored and excavated sites. In the beginning, the documentation was initiated to record all the inscribed potsherds in the custody of the Tamil Nadu State Archaeology Department. Then, the documentation extended to other organisations such as the Archaeological Survey of India, Tamil University, Pondicherry University, Madras University, Government Museums and other institutions and individuals. Nearly 1570 Tamiḻi-inscribed potsherds from 47 sites were documented. Of the 1570 inscribed potsherds, 1182 potsherds engraved with Tamiḻi (Tamil-Brāhmī) scripts were documented, and the remaining 388 could not be documented due to non-availability, non-permission issues or lack of accessibility. For instance, we fail to document the bulk of 375 inscribed potsherds from the ASI excavations at Kodumanal due to permission issues.

The methodology followed in the study of inscribed potsherds falls under two major categories, one for graffiti and another for Tamiḻi inscribed potsherds. All the available

inscribed potsherds, both graffiti and Tamil̲i, were first catalogued by providing unique numbers. Then, each sherd was photographed, and drawings were prepared. Once the photo documentation and drawings are completed, the decipherment of the Tamil̲i text is taken up and completed. The palaeography, orthography, chronology and content of the inscriptions were analysed based on decipherment. The images and drawings of the entire inscribed sherds were indexed and placed on plates along with the readings of the inscriptions.

Documentation of graffiti-bearing potsherds

The methodology followed in the documentation and analysis of graffiti marks could be placed under the following heads:

- Documentation of graffiti-bearing potsherds
- Morphological analysis
- Structural analysis
- Contextual analysis
- Inter and intra-regional comparative studies
- Origin, growth and transformation
- Relationship between Graffiti and Indus script
- Relationship between Tamil̲i and Graffiti

The information related to the graffiti-bearing potsherds such as site name, geocoordinates, taluk, district, state, excavator/explorer's name, institution, year of excavation, the present location of the sherd, trench number, depth, layer, context such as habitation or burial, cultural phase such as Iron Age/Early Historic, material such as ceramics/terracotta, type of ceramics such as black-and-red ware, russet coated ware, black slipped ware etc., shape such as bowl, plate, lid, etc., location of the signs such as shoulder, rim, base, etc., are documented to get a complete information on the nature of potsherds. Each sherd is assigned a catalogue number carrying the abbreviation of state, site and nature of scratch. For instance, TN-TKP-G-0001 stands for the state of Tamil Nadu (TN), site Thulukkarpatti (TKP), Graffiti (G) and catalogue number (0001). In the same way, each image of the potsherd is assigned a unique number. For instance, 0121_TKP_Graffiti_Image_01-02 stands for the catalogue number (0121), abbreviation of the site (TKP), type of specimen (graffiti), photo (image), and number of images of that particular pot (01 2 stands for two images). The same method is followed for drawing also (0121_TKP_Graffiti_Drawing_01). In a few cases, as one observed at Alagankulam, Kilanamandi and Porunthal, the pot carries identical signs on the shoulder portion engraved opposite to each other. On a few occasions, different signs were engraved instead of having identical ones. In such cases, the sherd is assigned a single catalogue number with extension letters a and b. The same number is used as file names

for the image file as well as for the drawing file. All the drawings are made in AutoCAD. The full pot is reconstructed wherever possible. Besides, the name of the documenter and references are provided, and the actual images and drawings are inserted in the database for the purpose of verification. This database is used for analysis.

Once the cataloguing of the graffiti-bearing sherds is completed, the attempt to identify the signs has been initiated. The analysis led to an identification of base signs, variants of base signs and composite forms of base signs (Table 3.2). Any individual sign containing graphic elements is considered a base sign, or one may say that the minimum grapheme is designated as a base sign, and all other pictorial representations occurring once or twice are considered as field symbols. The sign classification and numbering are arranged according to morphology, but no other linguistic elements are involved. These base signs are numbered. For instance, signs 1.0, 2.0, 3.0 … stand for base signs. Some of the base signs are added with additional strokes that are considered variants of the signs. These small strokes added to the base signs never occur independently but always occur as a part of the base signs. These were numbered as sub-numbers of base signs. For instance, sign 1.1, 1.2, 1.3 …. and sign 2.1, 2.2, 2.3 … stand for the variants of base signs 1 and 2. Some signs are found as standalone signs, and some of the signs are found in association with other base signs. Any text or group of signs containing more than one base sign is considered a composite sign. Two base signs or more than two base signs are engraved one after another at initial, medial and terminal positions. The base sign occupied at the initial position is considered as the composite of that particular base sign, and the sign number is assigned accordingly. The composite signs are numbered by adding the letter-C (Letter-C stands for composite sign) with the sign number. For instance, sign 1.25C, 2.26C, …. stand for composite signs of 1.0 and 2.0 respectively. The close observation of some of the graffiti marks suggests an overlapping of more than one sign. Whenever a base sign is placed inside/attached/superimposed with/within another base sign, it is considered a ligature. For instance, sign 1.35C, 1.38C, 1.44C, 1.88C, 1.117C, 2.22C, 2.42C, 2.85C, 3.43C, 6.13C, 6.36C, 7.10C, 7.21C, 7.31C, 14.4C, 14.11C, 15.33C, 15.39C, 16.25C, 16.57C, 23.22C and 23.38C could be cited. Once the composite signs are assigned, the position of a particular base sign in the text/group of signs is analysed to understand its structure. As stated above, a base sign is assigned a sign number. The variant of the base sign is assigned with sub-numbers (Table 3.3). Sometimes the sign variant is used to denote the graphic/morphological variations of the same sign due to the different hands of the engraver. The base signs and their variants are logically assigned/numbered. For instance, Sign 1.14 stands for the base sign (1.0) and its variant (1.14). In composite forms, each base sign is assigned a number. For instance, 1.57C/1.58C stands for two different individual base signs. On a few occasions, more than two/three/more base signs were engraved (sign 1.23C, 1.54C and 1.124C).

Table 3.2. Assignment of numbers for base signs, variants, composites and ligatures

		The sign 1.0 is the base sign. The arrow mark added to the top of the left oblique line is considered a variant of the base sign.
Sign 1.0	Sign 1.24C	
		There are two base signs. In the first example, it is the combination of two base signs, 3.0 and 1.0, assigned as sign 1.20C, and in the second example, it is the combination of 1.0 and 31.7 assigned as sign 1.29C. The base sign (.0) occupies either as a prefix or a suffix.
Sign 1.20C	Sign 1.29C	
		The sign 24.7C is the combination of three base signs 24.6, 39.0 and 31.7. The sign 16.46C is the combination of three base signs 16.0, 1.0 and 33.1
Sign 24.7C	Sign 16.46C	
		The sign 2.43C is the combination of four signs 2.0, 30.0, 39.0 and 1.0. The sign 1.54C is the combination of 15.0, 1.0, 41.0 and 39.0
Sign 2.43C	Sign 1.54C	
		The sign 16.29C is the combination of signs 16.0 and 1.0, but the sign 1.0 is placed inside the 16.0 as a ligature. The sign 15.21C is the combination of signs 15.0 and 4.0, but the sign 4.0 is placed inside the 15.0 as a ligature.
Sign 16.29C	Sign 15.21C	

There are 42 base signs, and each base sign has its variants and composites (see sign table in Chapter 5). The total number of base signs found as variants is 551, and in composite forms accounts for 2124 (Table 3.3). Only two signs (sign 1.0 and 2.0) have the highest number of occurrences, respectively 164 and 218. Nearly four signs (sign 1.0, 2.0, 3.0 and 13.0) are reported with more than a hundred occurrences. About eleven signs (sign 5.0, 9.0, 11.0, 15.0,

16.0, 17.0, 21.0, 22.0, 34.0, 36.0 and 37.0) have above fifty occurrences. Interestingly, one sign (20.0) fails to yield its composite form. Future documentation may give a better picture of this sign. The cursory look of the sign table would give a better picture of the nature of the number of occurrences.

Table 3.3. Number of occurrences of base signs and sub-signs

S. No	Base sign	Base sign and its variants	Base sign as composites	Total umber of variants	Total number of composites	Total
1	1.0	1.1 – 1.39	1.1C-1.124C	39	124	164
2	2.0	2.1 – 2.38	2.1C- 2.179C	38	179	218
3	3.0	3.1 – 3.29	3.1C – 3.106C	29	106	136
4	4.0	4.1-4.3	4.1C-4.19C	3	19	23
5	5.0	5.1-5.16	5.1C-5.35C	16	35	52
6	6.0	6.1-6.9	6.1C-6.40C	9	40	50
7	7.0	7.1-7.4	7.1C-7.32C	4	32	37
8	8.0	8.1-8.5	8.1C-8.8C	5	8	14
9	9.0	9.1-9.6	9.1C-9.43C	6	43	50
10	10.0	10.1-10.4	10.1C-10.5C	4	5	10
11	11.0	11.1-11.12	11.1C-11.59C	12	59	72
12	12.0	12.1-12.3	12.1C-12.3C	3	3	7
13	13.0	13.1-13.35	13.1C-13.66C	35	66	102
14	14.0	14.1-14.15	14.1C-14.16C	15	16	32
15	15.0	15.1-15.9	15.1C-15.83C	9	83	93
16	16.0	16.1-16.7	16.1C-16.59C	8	59	68
17	17.0	17.1-17.16	17.1C-17.41C	16	41	58
18	18.0	18.1-18.10	18.1C-18.5C	10	5	16
19	19.0	19.1-19.6	19.1C-19.28C	6	28	35
20	20.0	20.1-20.6	0	6	0	7
21	21.0	21.1-21.11	21.1C-21.38C	11	38	50
22	22.0	22.1-22.16	22.1C-22.35C	16	35	52
23	23.0	23.1-23.4	23.1C-23.40C	4	40	45
24	24.0	24.1-2.10	24.1C-24.20C	10	20	31
25	25.0	25.1-25.8	25.1C-25.21C	8	21	30
26	26.0	26.1-26.5	26.1C-26.10C	5	10	16
27	27.0	27.1-27.6	27.1C-27.2C	6	2	9
28	28.0	28.1-28.12	28.1C-28.26C	12	26	39
29	29.0	29.1-29.24	29.1C-29.22C	24	22	47
30	30.0	30.1-30.20	30.1C-30.70C	20	70	91
31	31.0	31.1-31.14	31.1C-31.16C	14	16	31
32	32.0	32.1-32.10	32.1C-32.20C	10	20	31
33	33.0	33.1-33.17	33.1C-33.16C	17	16	34

S. No	Base sign	Base sign and its variants	Base sign as composites	Total umber of variants	Total number of composites	Total
34	34.0	34.1-34.6	34.1C-34.60C	6	60	67
35	35.0	35.1-35.18	35.1C-35.18C	18	18	37
36	36.0	36.1-36.23	36.1C-36.51C	23	51	75
37	37.0	37.1-37.27	37.1C-37.40C	27	40	68
38	38.0	38.1-38.15	38.1C-38.22C	15	22	38
39	39.0	39.1-39.18	39.1C-39.22C	18	22	41
40	40.0	40.1-40.2	40.1C-40.3C	2	3	6
41	41.0	41.1-41.7	41.1C-41.20C	7	20	28
42	42.0	42.1-42.5	42.1C-42.8C	5	8	14
			Total	551	1531	2124

The database contains information on all graffiti-bearing potsherds, but not all potsherds carry the full form of the graffiti mark. Most of the potsherds are fragmentary in nature and carry a small scratch. Therefore, the sign number is assigned wherever one could satisfactorily recognize the sign. The graffiti-bearing potsherds were separated as recognized and unrecognized. The images of recognized signs alone were provided in image plates. Based on recognized signs, a sign table is prepared in the order of base sign, base sign and its variants and base signs in composites. A faithful attempt is made to list the signs in a logical order. The preparation of plates, both images and drawings, containing identical sign numbers, is made by analysing the database. This provided a good picture of the availability of a particular sign found at various sites. There are a considerable number of field signs (signs 43 to 166), amounting to 124 signs, that were designated as field signs (See sign table of Chapter 5). These signs were designated based on pictographic nature (sign 48.0, 69.0, 107, etc.) or abstract nature of the sign (sign nos. 59.0, 64.0, 82.0, 87.0, etc.). It rarely occurs in composite forms with other designated base signs. The present status of field signs may change depending upon future documentation.

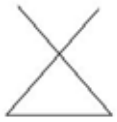
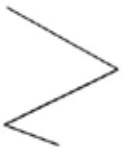
There are several occasions or instances in which two or three base signs are engraved as composite signs. Such occurrences are sorted out and listed. A concordance is prepared to see the position/placement of a particular sign in comparison with other base signs. In composite signs, each base sign is taken as a stem (main sign) and other signs occupying the preceding or initial position are assigned as prefix-1, prefix-2 and so on and other signs occupying the succeeding position or terminal position are termed as suffix-1, suffix-2 and so on. The concordance is prepared for all 42 base signs. The concordance is tabulated to understand the position of a particular sign in a given composite sign (see Table 6.1 in Chapter 6). The signs are mostly inscribed on the shoulder portion of the exterior surface of the pot. In some

of the pots, it is engraved on the interior surface, but mostly they were dishes and plates. In a few instances, the sign is engraved on the opposite side of the pot, as one noticed at Kilnamandi, Kodumanal and Porunthal. The placement of the signs indicates the intention of the engraver. The engraver intended to make the sign visible to others. Further, they were mostly engraved on the tableware such as bowls, dishes, plates and pots of fine varieties. The storage pots and cooking vessels hardly had any engravings. Very importantly, all the graffiti marks are post-firing in nature and were engraved by the owner of the pot after purchase. The position, context, shape and quality of the containers clearly indicate that these signs occupy an important position in society. The depth and thickness of the sign depend on the nature of the ceramics, the type of tool utilized to engrave the sign and the capacity/ perception of the engraver. These factors had a tell-tale impact on the appearance of the sign. The intention of the engraver is taken into account while preparing the sign table. Identical symbols engraved by different engravers had little variation. In such cases, the signs are normalised for analysis. Thus, the sign table is prepared with normalized signs by observing the best available specimen (see sign table 5.1 and sign plate 5.2 in Chapter 5).

Morphological Analysis

The non-decipherment of neither the Indus script nor graffiti marks compelled us to restrict to morphological analysis rather than any linguistic analysis. The signs engraved on potsherds differ modestly due to various engravers and the material involved in the writing process. However, there is a common feature or shape noticed in the majority of the cases. As stated above, the signs having identical morphological resemblance are normalized to prepare base signs. In addition, there are two types of signs that represent the graffiti-bearing potsherds. In the first type, the base signs were added with small additional strokes at appropriate places, as one observes in Brāhmī or Tamiḻi (Tamil-Brāhmī) scripts, wherein additional strokes are added to serve as a diacritical mark (Table 3.4). Whether these additional strokes observed in graffiti marks served as diacritical marks is yet to be ascertained in the present study. These small strokes never occur independently. In the second type, additional base signs were added before or after the base signs, making them composite signs.

Table 3.4. Base sign and its variants

			Base sign 1.0 is added with two small strokes placed at the top of the right oblique line.
Sign 1.0	Sign 1.24	Sign 1.25	
			Base sign 2.0 is added with small strokes placed at the bottom of the oblique line.
Sign 2.0	Sign 2.12	Sign 2.19	
			Base sign 31.0 is added with a single stroke or three small strokes in one of the vertical or oblique lines.
Sign 31.7	Sign 31.8	Sign 31.12	
			Base sign 24.1 is added with an inverted V-shaped stroke at the top left.
Sign 24.1	Sign 24.5C		

Structural Analysis

The maximum number of signs listed in the present study, based on the available data, is 166 signs. Out of 166, 42 signs could be considered as base signs. The remaining signs occur once or twice and are considered field symbols. The base signs occurred with additional strokes representing variants and also in composite forms in association with other signs. The maximum number of composite signs witnessed for a particular base sign is about 185 (sign 2.0). As stated above, only four signs (sign 1.0, 2.0, 3.0 and 13.0) have the highest number of occurrences crossing more than a hundred as composites (Charts 3.1-3.3). About twelve signs (sign 5.0, 9.0, 11.0, 15.0, 16.0, 17.0, 21.0, 22.0, 30.0, 34.0, 36.0 and 37.0) have

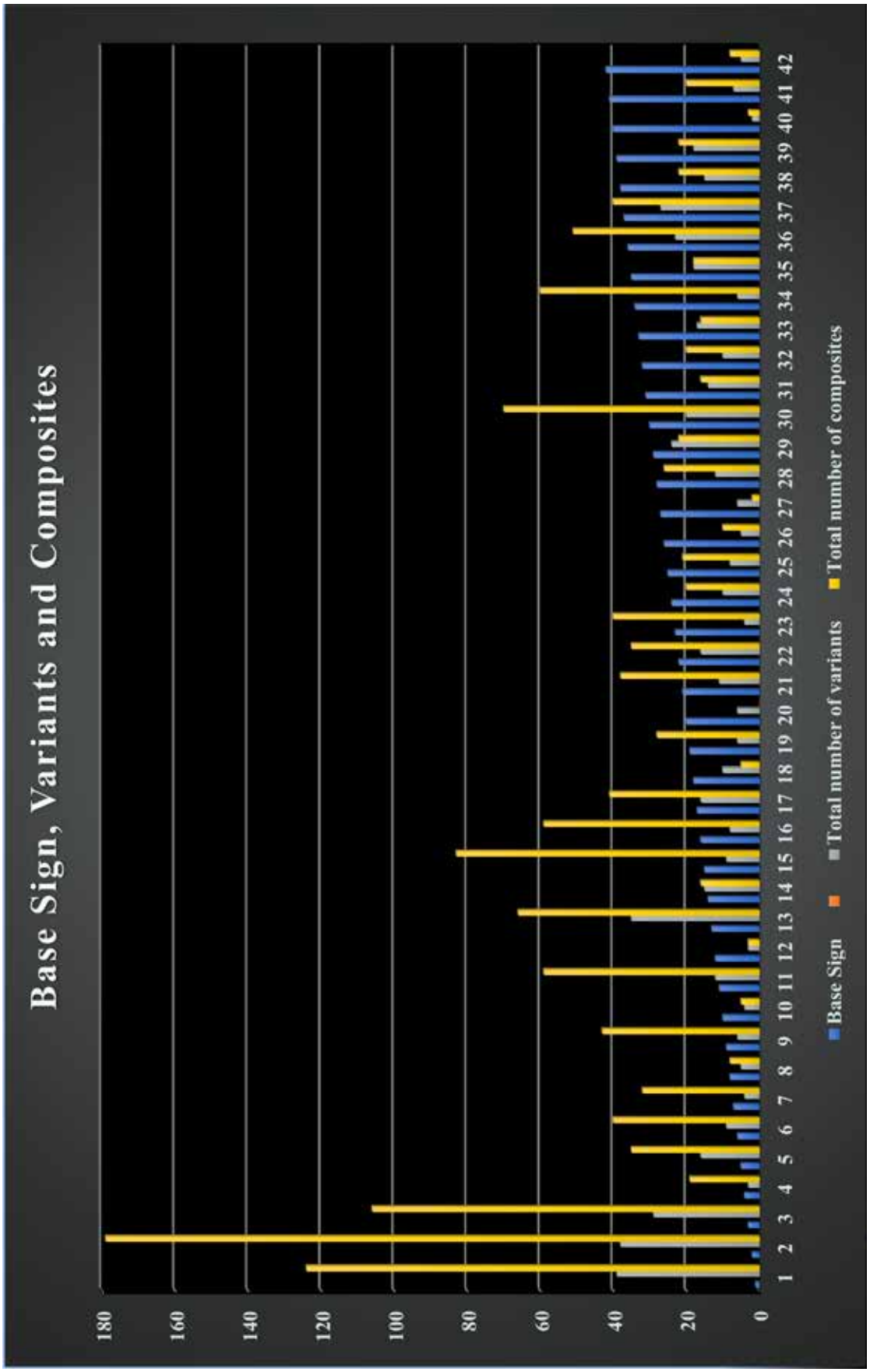


Chart 3.1. Number of occurrences of base signs, variants and composites

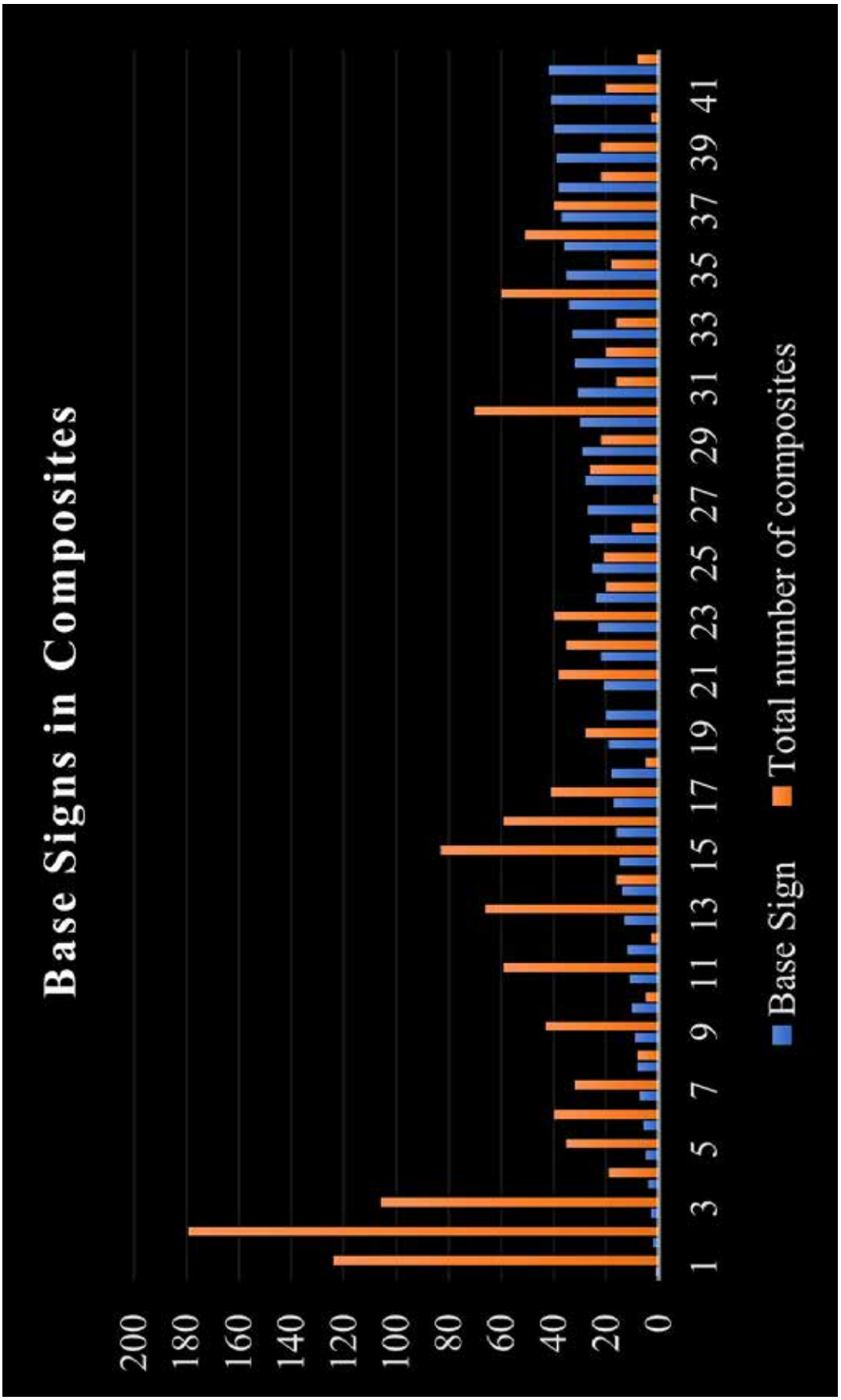


Chart 3.2. Number of occurrences of base signs in composites

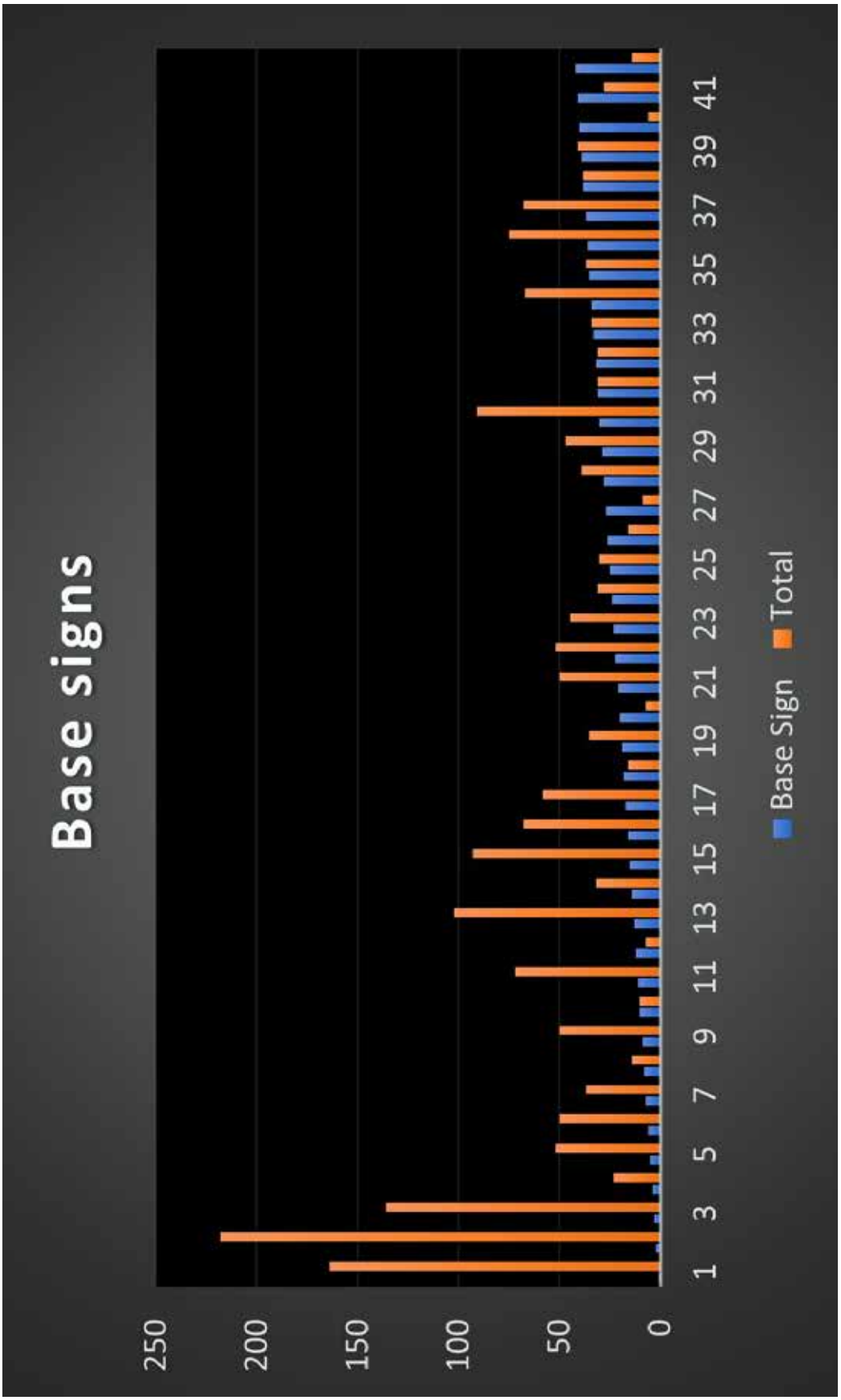
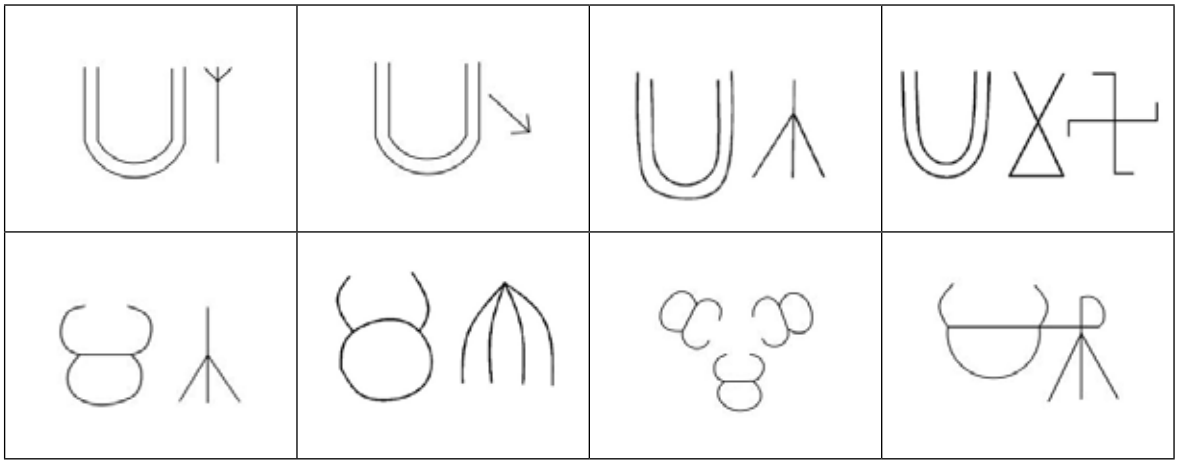


Chart 3.3. Number of occurrences of base signs

above fifty occurrences. The occurrence of a large number of composite signs is restricted to three base signs (sign 1.0, 2.0 and 3.0). A few of them had 40 to 50 occurrences (signs 6.0, 23.0, 29.0 and 39.0). About eleven signs (sign 7.0, 14.0, 19.0, 24.0, 25.0, 28.0, 31.0, 32.0, 33.0, 35.0, 38.0 and 39.0) have 30-40 occurrences. Five signs (sign 4.0, 8.0, 10.0, 18.0, 26.0, 41.0 and 42.0) met with 10-20 incidences, and the remaining five signs (sign 10.0, 12.0, 20.0, 27.0 and 40.0) reported with less than ten occurrences. Thus, only sixteen signs were frequently issued, and more than ten signs were occasionally used (Table 3.3). The structural analysis is made taking all these variables into account. In a composite sign, a particular base sign always occupies an initial/first position (Table 3.5; see concordance in Chapter 6). Otherwise, some of the base signs occupy different positions/placements at the medial or terminal. A concordance is prepared by considering the position of a particular base sign.

Table 3.5. Position of a particular base sign (sign 16.0 and 40.0)



Contextual analysis

The graffiti-bearing potsherds are mostly recovered from two contexts, namely the burial context and the habitation/settlement context. The signs recovered from a sepulchral context are restricted to a few signs whereas in a habitation context, there are many signs. Within the graves, some of the signs are restricted to a group of identical graves. In some cases, a particular sign is recovered from graves occupying a particular area. For instance, the limited exposure of graves at Kodumanal and Porunthal provided such data for contextual analysis (Figs. 3.2-3.3). Thus, the context in which the particular sign recovered is taken into account for analysis, and we derived certain inferences from contextual analysis. For instance, Kodumanal excavated graves met with a particular sign reported with a good number of carnelian beads, whereas graves met with four vertical lines hanging from a horizontal line met with copper/bronze objects and never encountered any carnelian beads (Table 3.6). In

general, the graffiti marks are shown with a single sign and on a few occasions, there is more than one sign. All such specimens are identified, compiled and analysed to see any pattern that emerges in the graffiti writing system.

Table 3.6. Signs from Kodumanal Graves

MEG-V, IX and XIV	A three-pronged fork-like sign. Two oblique lines meet a central vertical line at the top, with wavy lines superimposed over an extreme oblique line.	
MEG-III, VII, VIII, X, XII, XIII, XV, XVI	Four vertical lines hanging from a horizontal line	

Inter and intra-regional comparative studies

The graffiti-bearing potsherds were recovered in the Indus Valley Civilization, Central Chalcolithic cultural zones, Deccan and the entire peninsular India. If one looks into the distribution pattern, it is found mostly in the western, Deccan, coastal and southern parts of India. Most of the data available to us, other than Tamil Nadu and IVC, were encountered in graves, and only a few came from habitation cuttings. These limited and grave-specific data from outside Tamil Nadu restricted our comparison and understanding. However, a modest attempt is made to compare the data, particularly with peninsular Indian sites. In Tamil Nadu, some of the sites, such as Thulukkarpatti, Keeladi, Kodumanal and Perumbalai, met with a large number of graffiti-bearing potsherds, permitting us to make site-specific analysis. Such a situation is lacking in other parts of India. Irrespective of these lacunae, inter and intra-regional analyses are made but mostly confined to Indus scripts. The majority of the graffiti marks/signs are similar to Indus graffiti marks found on Harappan potsherds. Interestingly, the signs engraved on the seals are reported as scripts in a majority of the publications, whereas the same/similar Indus signs found engraved on the pots were mostly reported as graffiti marks instead of being reported as Indus script/sign. The comparative study of the signs found on the Indus seals, as well as potsherds, was taken into account while comparing with the graffiti marks noticed in Tamil Nadu. The comparison between graffiti and the Indus script is dealt with separately (see Chapter 7). The comparative study on the graffiti marks encountered in graves in Kerala, Andhra Pradesh, Telangana and Karnataka in sites such as Savandurga (Foote 1901), Feroke (Aiyappan 1933), Jala (Foote 1901), Jadigenahalli (Seshadri 1960), Maski (Thapar 1957), Hyderabad (Hunt 1914)

reflects the same as of Tamil Nadu graves wherein each grave has identical graffiti marks suggesting that they belonged to particular social group. There are several graffiti marks that were encountered in habitation cuttings in Jammu and Kashmir, Uttar Pradesh, Madhya Pradesh, Orissa, Maharashtra, Andhra Pradesh, Karnataka and Kerala from the sites such as Burzahom, Hastinapur, Achichchatra, Sisupalgarh, Radhanagar, Palur, Mahurjhari, Bahal, Brahmagiri, Chandravalli, Chinnamarur, Kadambapur, Kondapur, Peddabankur, Piklihal, Ponchampadu, Upperu and Yalleswaram, suggesting its widespread (Fig. 3.4).

Origin, growth and transformation

The survival of these graffiti marks witnessed more than three thousand years from the third millennium BCE down to the beginning of the Common Era. Its widespread occurrence, both chronologically and spatially, makes the issues very complicated in understanding the origin, growth and transformation. There are different views on its origin, growth and transformation. It is believed that graffiti marks served as a precursor to the evolution and standardization of Indus script. The close resemblance between graffiti marks and the Indus script and its widespread occurrence leads us to have such a view. In Tamil Nadu, graffiti marks are noticed in the Iron Age and pre-Brāhmī/Tamiḻi level (Early Historic) stratigraphical context, and then they continued for some time with the Brāhmī/Tamiḻi script. Once the Brāhmī script/Tamiḻi script started appearing, the occurrence of graffiti marks went down, and finally, the usage was totally discarded. This situation suggests the close relationship between Brāhmī/Tamiḻi script and Graffiti. Thus, the occurrence of graffiti in the pre-Brāhmī level, in association with Brāhmī/Tamiḻi script and finally Brāhmī/ Tamiḻi script alone led to the hypothesis that these were not mere markers, but rather they were a kind of script used for effective communication during the Copper and Iron Ages. The complete transformation from graffiti to Brāhmī/Tamiḻi is yet to be ascertained in clear terms, but the available data is in favour of these hypotheses.

Relationship between Graffiti and Indus Script

One of the important findings of the present study is the comparison between the Graffiti and Indus script (see Chapter 7). The entire corpus of seals, sealings and graffiti marks found in the Indus Valley Civilization has been collected from the *Corpus of Indus Seals and Inscriptions* compiled by Jagat Pati Joshi and Asko Parpola (Vol.1, 1987), Sayid Ghulam Mustafa Shah and Asko Parpola (Vol. 2, 1991) and Asko Parpola, B.M. Pande and Petteri Koskikallio (Vol. 3, 3.1 and 3.2). Besides, graffiti-bearing sherds from many other Harappan sites were compiled from the NMMA database and also from individual scholars such as Bagasra, Jaidak, Shikarpur, Banawali, Kalibangan, Bara, Chanhu-daro, Dhalewan, Dholavira, Karanpura, Karvan, Niababad, Rakhigarhi, Ropar, Sardheri, Nagwda, Vagad,

Vallabhipur, Kunal, Ganeshwar, Rangmahal and Ratanpura. Nearly 551 base signs, 1531 variants and 2124 composite signs were compiled and compared. There are several signs found on the Indus seals, sealings and potsherds that are identical to the ones found in South Indian sites, particularly in Tamil Nadu. The plates containing seals, sealings and graffiti sherds are prepared so that one can visualize their similarity.

Relationship between Tamiḻi and Graffiti

The relationship between graffiti and Tamiḻi script is well established chronologically, spatially, stratigraphically and contextually. In cave as well as in pottery inscriptions, the graffiti marks are noticed in the final position of the Tamiḻi inscriptions (Figs. 3.5-3.7). Further, these post-firing graffiti marks are mostly noticed on the shoulder portion of the tableware as observed in the Tamiḻi inscriptions. The importance given to these marks/ signs, along with Tamiḻi inscriptions, clearly suggests their cultural/linguistic significance. The Keeladi and Kodumanal provided clear evidence of its position at the end of Tamiḻi inscriptions. The Anaikottai bi-script bronze seal from Sri Lanka could be cited as the finest example of the relationship between Tamiḻi and graffiti (Fig. 3.8).

Documentation of Tamiḻi (Tamil-Brāhmī) inscribed potsherds

In the case of Tamiḻi (Tamil-Brāhmī) inscribed potsherds, an identical methodology is followed with additional information. The information related to the Tamiḻi bearing potsherds such as site name, geocoordinates, taluk, district, state, excavator/explorer's name, institution, year of excavation, the present location of the artefact, trench number, depth, layer, context such as habitation or burial, cultural phase such as Iron Age/Early Historic, material such as ceramics/terracotta, type of ceramics such as black-and-red ware, russet coated ware, black slipped ware etc., shape such as bowl, plate, lid, etc., location of the signs such as shoulder, rim, base, etc., are documented to get complete information on the nature of potsherds. The readings of the text were segmented as prefixes, stems and suffixes. Each sherd is assigned a catalogue number carrying the abbreviation of state, site and nature of scratch. For instance, TN-AGM-D-0001 stands for state Tamil Nadu (TN), site Alagankulam (AGM), Damili/Tamiḻi (D) and catalogue number (0001). In the same way, the images and drawings of each sherd were assigned a unique number. For instance, 0001_KDL_Damili_ Image_01 stands for the catalogue number (0001), site Kodumanal (KDL), name of script, image and number of images (01).

The readings of the inscription are provided, except for a few, to all the inscribed potsherds. Most of the Tamiḻi inscribed potsherds carry personal names. Some of the personal names

contain a stem part (main/given name), a prefix (mostly father name/attributes) and a suffix (clan name/attributes). For instance, in the inscription *kūla-antai-campaṉ-akal,* the term *kūla-antai* stands as an honourific prefix, *campaṉ* represents the stem part of the inscription carrying the name of the person, and *akal* means pot served as an attribute. In the inscription *Campaṉ Sumanan*, the name *Campaṉ* stands for the father's name, and *Sumanan* stands for his name (the personal name of the person is considered as the stem part); in *antavaṉ ātaṉ*, *antavaṉ* stands for his name, and *ātaṉ* stands for the clan name. As per the content of the inscribed potsherds, the stem, prefix and suffix are entered. Then, each inscription is assigned a unique number. For instance, 0121_KDL_Tamiḻi_Image_01 stands for inscription number (0121), the site (KDL), type of specimen (Tamiḻi), photo (image), and number of images of that particular inscription (01-2 if there are two images). The same method is followed for drawing also (0121_KDL_Tamiḻi_Drawing_01). The same number is used as file names for the image file and drawing file. All the drawings are made in AutoCAD. Besides, the name of the documenter, reference and the actual image and drawing are inserted in the database for the purpose of verification. This database is used for analysis.

Direction of writing

In the Indus seals, the direction of writing in seals is left to right, whereas in the impression (sealings) it is right to left. Several scholars expressed their views regarding the direction of writing in their scholarly works (Gadd and Smith 1931:409, 427; Hunter 194:37; Ross 1939-40:554; Dani 1963:16; Lal 1966:52, 1967-68:15; Parpola 1969:18). The right-to-left direction of writing is determined based on sign sequences, signs at the left end undergo occasional cramping and diminution in size for want of space, overlapping and split-sequence. However, Mahadevan felt that it could not be considered conclusive. Mahadevan listed several seals (Iravatham Mahadevan Seal no. 1336, 2486, 1126, 1093) that were written left-to-right. For instance, the right end signs in the seal number. 1336 are smaller and cramped; the signs progressively get smaller as one proceeds towards the right in the seal number. 1126, the first two signs at the right end are displaced and overflow to a higher register and in seal 1093, the signs occupy the top, right and bottom edges of the rectangular side in an approximately clockwise direction (Mahadevan 1977:10-14). There is evidence to suggest bidirectional writing, too (*boustrophedon* mode). However, Mahadevan finally suggested, based on computer analysis, that the general pattern of writing is right-to-left, though there are some exceptions. In support, he demonstrated the split-sequence found in seals 1052 and 1247 and also in seal 6112 compared with seals 2618 and 4090.

Unlike the Indus script, the direction of writing of the graffiti marks found in Tamil Nadu is left to right. This direction is determined based on the overlapping of the signs,

particularly in composite forms, and the placement of graffiti marks/signs at the end of the Tamiḻi inscription observed both in cave and pottery inscriptions (Figs. 3.9-3.10). While analysing the composite signs, the left-to-right sequence of writing is taken into account.

The above observations are based on the availability of a considerable number of graffiti-bearing potsherds from a particular geographical zone. A faithful documentation of graffiti marks encountered in different geographical zones is necessary to unravel the complete cultural and linguistic significance and implications of these marks.

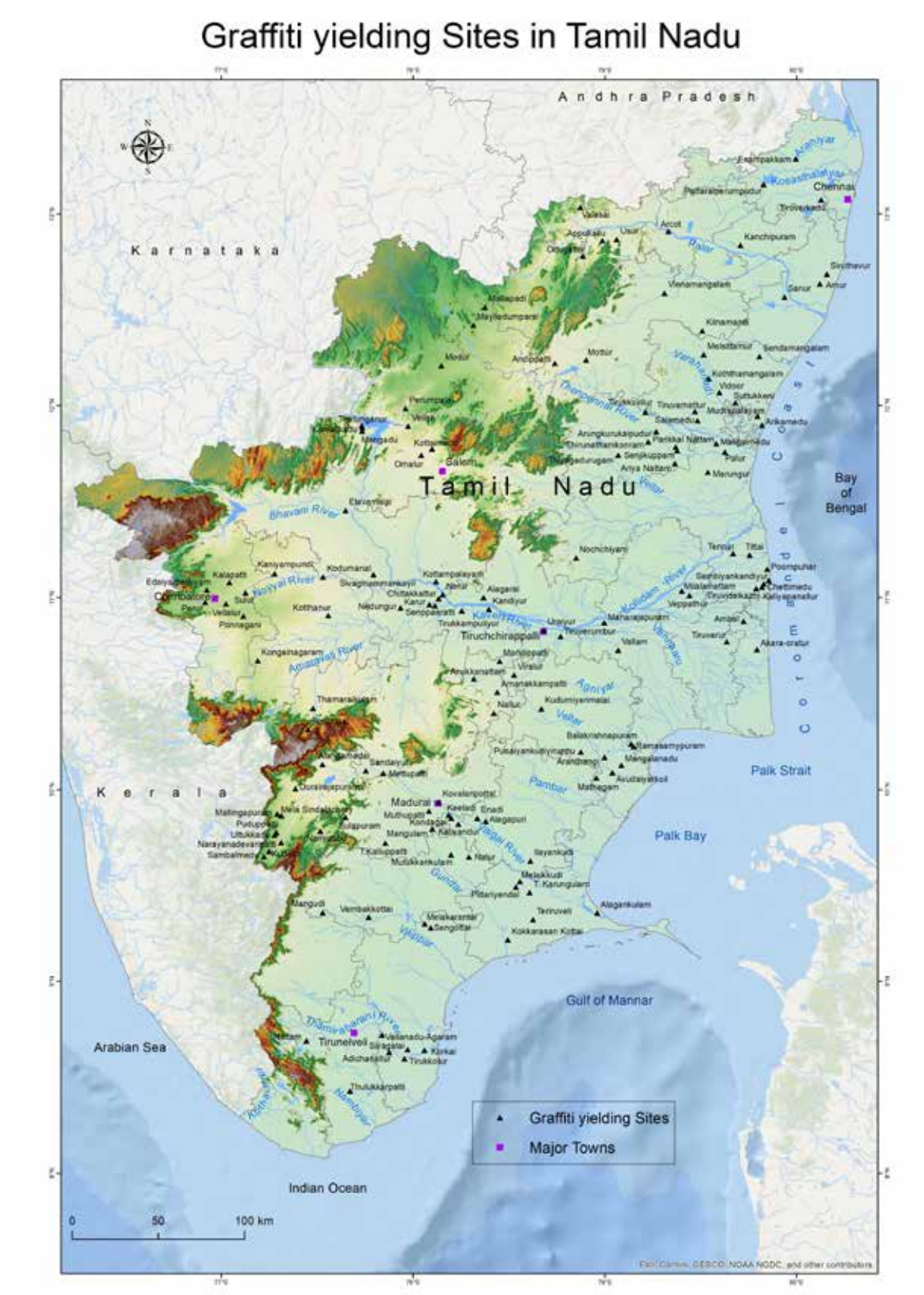


Fig. 3.1. Graffiti mark yielding sites in Tamil Nadu.

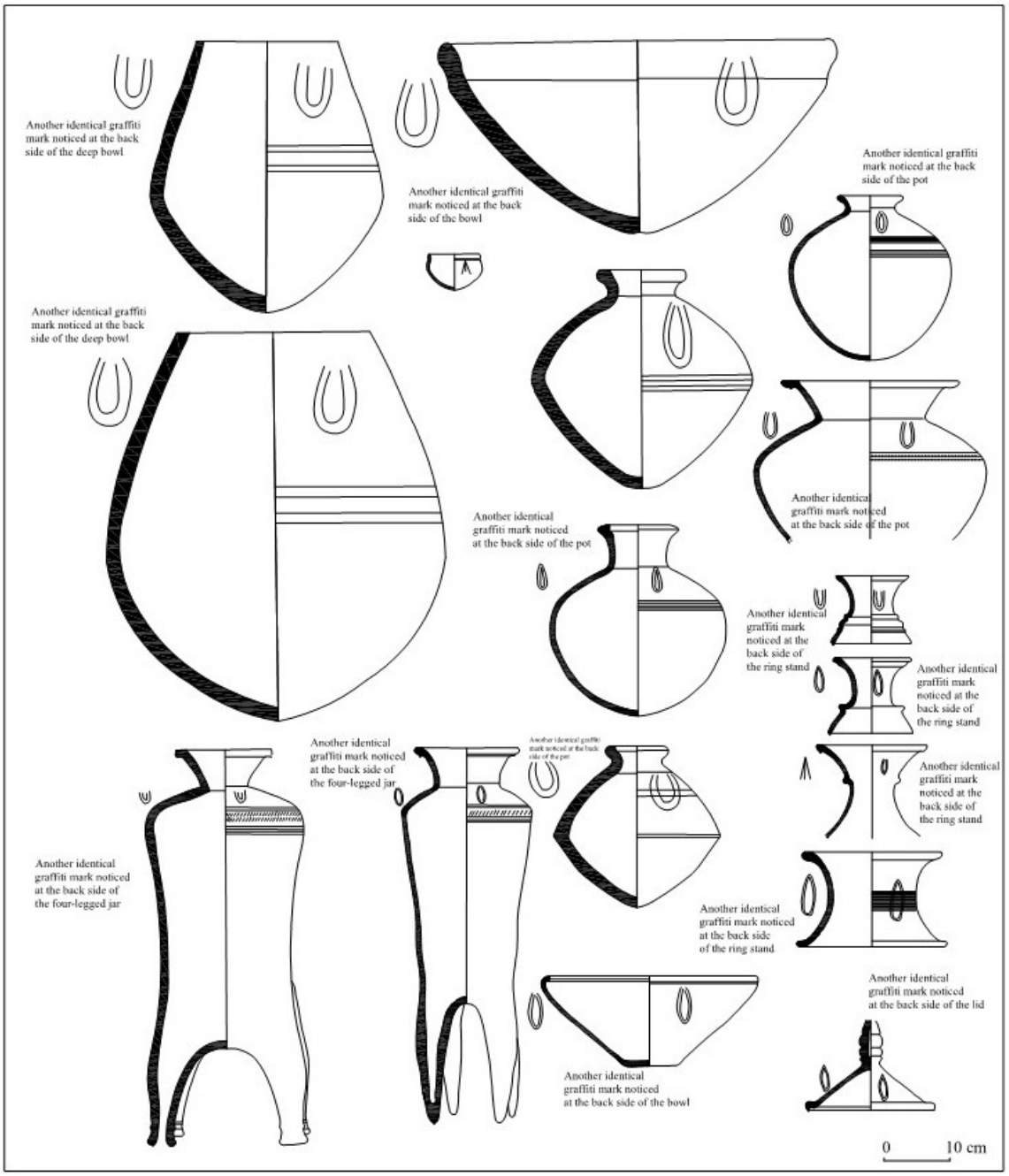


Fig. 3.2. Porunthal: Graffiti marks from graves

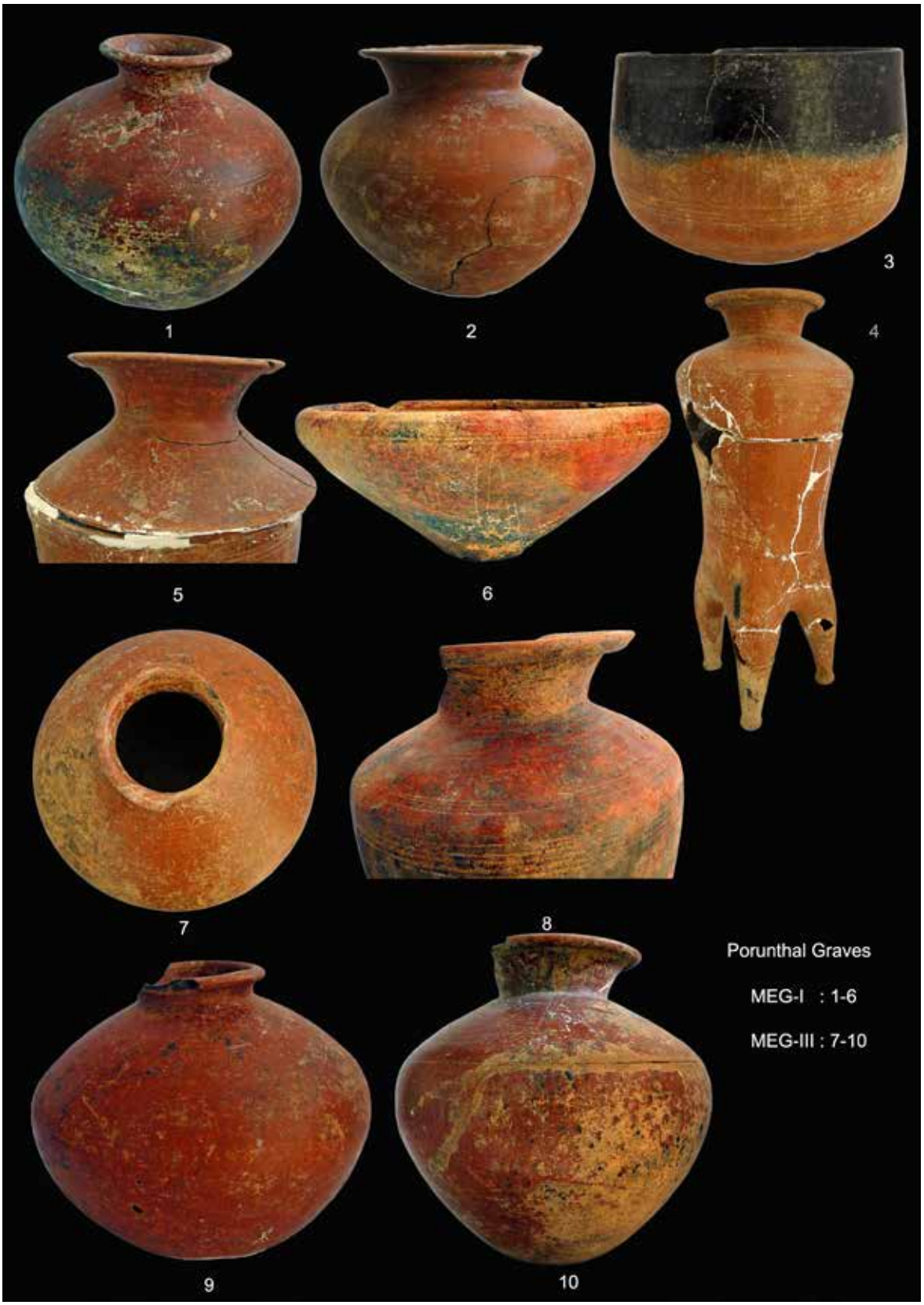


Fig. 3.3. Porunthal: Graffiti marks from graves

Fig. 3.4. Khammam: Graffiti marks

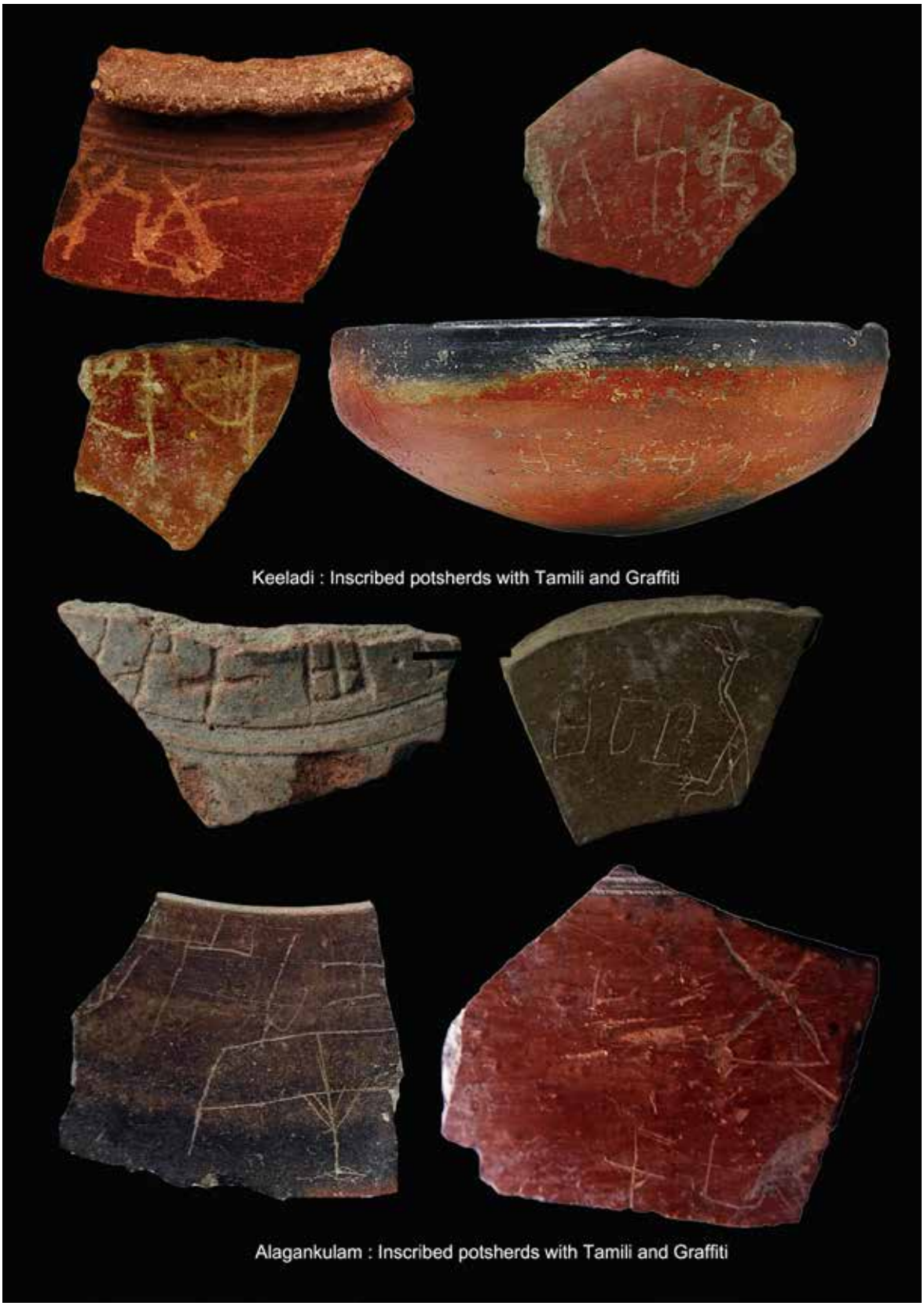


Fig. 3.5. Keeladi and Alagankulam: Graffiti with Tamil̲i letters

Fig. 3.6. Kodumanal: Graffiti with Tamil̲i letters

Fig. 3.7. Kongarpuliyankulam: Graffiti engraved at the end of the Tamil̲i inscription

Fig. 3.8. Anaikottai seal carrying both graffiti and Tamil̲i inscriptions

Fig. 3.9. Direction of writing

Fig. 3.10. Direction of Writing

Chapter-4

GRAFFITI SIGNS – AN INTRODUCTION

GRAFFITI SIGNS – AN INTRODUCTION

One of the undeciphered writing systems of India, popularly called graffiti marks, is found throughout India, with much concentration in South India. These post-firing graffiti signs are found engraved mostly on the shoulder portion of the outer surface of the pottery. They were engraved on the interior in a few cases, primarily confined to plates and dishes. It is one of the communication systems followed by past communities between the 3rd millennium BCE and the early part of the Common Era. The availability of sherds in large numbers and their extended survival for more than three millennia in different cultural contexts, namely pre-Harappan, Harappan, Central Chalcolithic, Iron Age, and Early Historic cultural contexts, covering a vast geographical area, demanded that we examine these signs very closely. The sudden disappearance of the Indus script in the middle of the second millennium BCE and the appearance of the Brāhmī script in the sixth century BCE stirred a kind of interest among scholars in analyzing graffiti signs to understand the script's origin in India. The existence of graffiti without any break till the advent of the Brāhmī script kindled a kind of inquisitiveness. The prolonged survival of these graffiti signs without many morphological changes and the close resemblance between Iron Age graffiti signs and the Indus script further pose pertinent questions about their utility and application. As per the present scenario, these signs are generally found in large numbers in Indus Valley cultural zones such as Saurashtra, the Greater Rann of Kutch, Rajasthan, the Deccan, and South India. In the Gangetic Valley and other parts of India, except the Coromandel coast, its occurrence is limited to a few shards. The graffiti signs appeared in the pre-Harappan level and continued in the successive Harappan, post-Harappan, Chalcolithic, Iron Age, and Early Historic cultural levels. The recent AMS ^{14}C dates of 2500-3000 BCE obtained at Adichanallur, Sivagalai, Mangadu, Theluganur, and Mayiladumparai place the Iron Age as contemporary to the Indus Valley civilization (Rajan *et.al.,* 2017; Rajan *et.al.,* 2022; Sivanantham *et.al.,* 2022). Though these signs were present in the Neolithic-Chalcolithic levels and contemporary rock paintings, their complete chronological schemes are yet to be ascertained clearly. The recent discoveries of graffiti signs from sources other than ceramics have considerably widened the scope of study, making it possible to initiate comparative studies in varied cultural contexts. Thus, the study of graffiti signs received wider attention to create a link or to fill the gap between the Indus script and the Brāhmī script. The study's success is still in the embryonic stage. Still, the presence of a substantial number of graffiti signs in varied cultural contexts needs to be documented and analyzed for future decipherment. In Tamil Nadu alone, more than 15184 graffiti-bearing potsherds were reported from 140 sites, and nearly 14165 sherds were documented so far (Table 4.1; Chart 4.1). The count may cross several thousand if one considers the entire India, particularly southern and western India. Irrespective of its

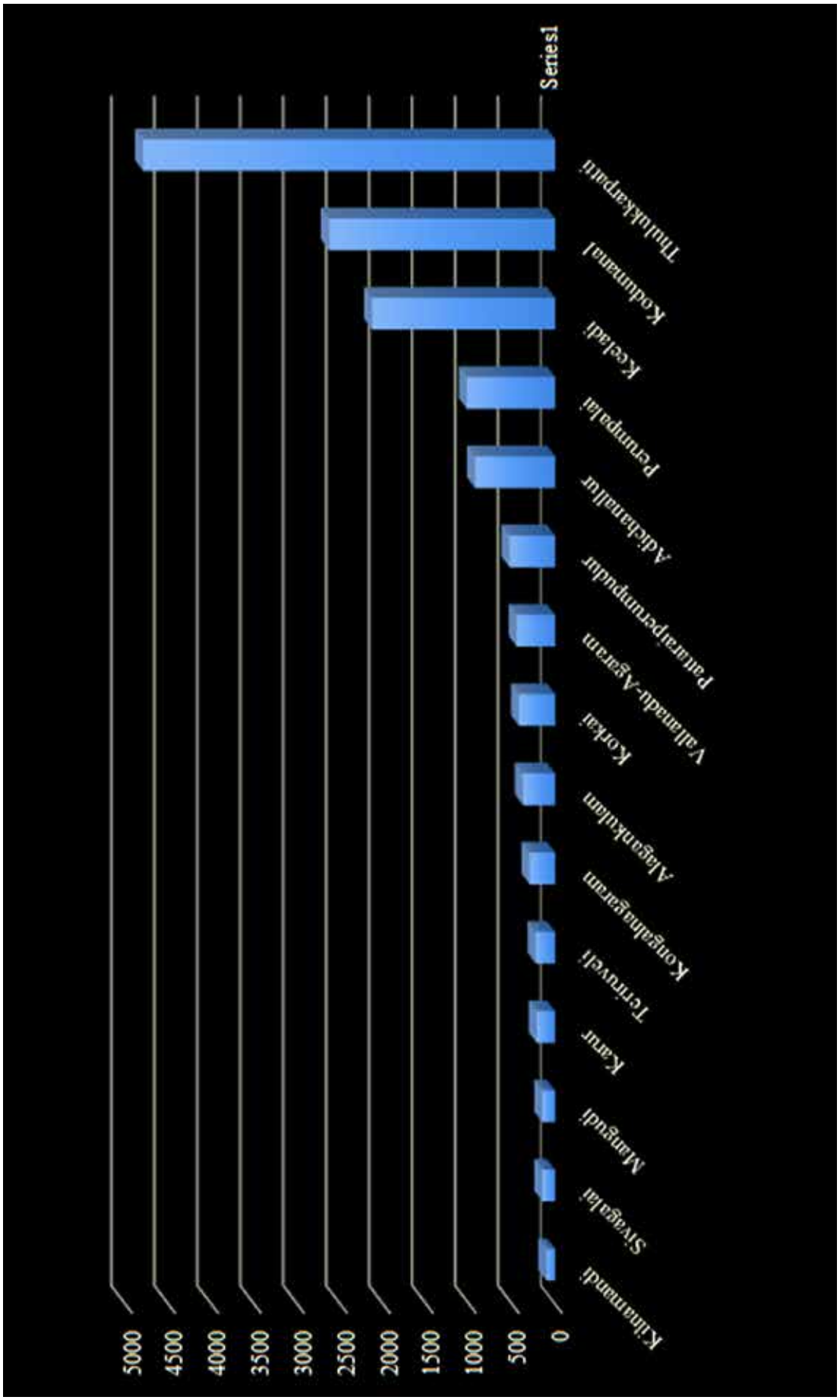


Chart 4.1. Major graffiti sherds yielding sites in Tamil Nadu

availability in various cultural zones, the present work attempts to document and analyze the graffiti signs encountered in Tamil Nadu alone.

Table 4.1. Graffiti-yielding sites in Tamil Nadu

S No.	Site	Taluk	District	No. of Sherds	Documented sherds
1	Adichanallur	Srivaikundam	Thoothukudi	932	932
2	Akara-oratur	Nagapattinam	Nagapattinam	3	3
3	Alagankulam	Ramanathapuram	Ramanathapuram	376	376
4	Alagapuri	Sivagangai	Sivagangai	1	0
5	Alagarai	Tottiyam	Tiruchirappalli	58	0
6	Alangamadai	Periyakulam	Theni	1	0
7	Amanakkampatti	Marungapuri	Trichy	1	0
8	Ambal	Nannilam	Nagapattinam	1	1
9	Amur	Thiruporur	Chengalpattu	1	0
10	Andippatti	Chengam	Tiruvannamalai	3	0
11	Anukkanattam	Manapparai	Tiruchirappalli	1	0
12	Appukallu	Anaikkattu	Vellore	4	4
13	Aranthangi	Arantangi	Pudukkottai	1	0
14	Arcot	Arcot	Ranipet	7	0
15	Arikamedu	Pondicherry	Pondicherry	8	0
16	Ariya Nattam	Ulundurpettai	Kallakurichi	15	15
17	Arungkurukaipudur	Tirukkoyilur	Kallakuruchi	1	0
18	Avudaiyarkoil	Avadaiyarkovil	Pudukkottai	1	0
19	Balakrishnapuram	Peravurani	Thanjavur	1	0
20	Chettimedu	Sembanarkoyil	Mayiladuturai	4	4
21	Chittakkattur	Manmangalam	Karur	1	0
22	Durairajapuram	Bodinayakkanur	Theni	1	0
23	Edaiyarpalaiyam	Sulur	Coimbatore	1	0
24	Elavamalai	Erode	Erode	1	0
25	Enadi	Tiruppuvanam	Sivaganga	1	0
26	Enampakkam	Ellapuram	Tiruvallur	1	1
27	Ilayankudi	Ilayankudi	Sivagangai	1	0
28	Kalapatti	Coimbatore North	Coimbatore	1	0
29	Kaliyandur	Tirupuvanam	Sivaganga	1	0
30	Kaliyapanallur	Tarangampadi	Nagapattinam	1	0
31	Kanchipuram	Kanchipuram	Kanchipuram	15	15
32	Kandiyur	Kulithalai	Karur	1	0
33	Kaniyampundi	Avinashi	Tiruppur	1	0
34	Karur	Karur	Karur	217	217

S No.	Site	Taluk	District	No. of Sherds	Documented sherds
35	Keeladi (ASI 797+ TNSDA 1335)	Thiruppuvanam	Sivagangai	2132	2132
36	Kilnamandi	Vandavasi	Tiruvannamalai	103	103
37	Kodumanal (TNSDA 2034+TU-PU598)	Perundurai	Erode	2632	1955
38	Kokkarasan Kottai	Kadaladi	Ramanathapuram	1	0
39	Komalikadu	Mettur	Salem	1	0
40	Kondagai	Vadipatti	Madurai	1	0
41	Kongalnagaram	Udumalpet	Tiruppur	298	298
42	Korkai	Eral	Thoothukudi	422	422
43	Koththamangalam	Vikkiravandi	Villupuram	30	30
44	Kottaimedu	Omalur	Salem	1	0
45	Kottampalayam	Mohanur	Namakkal	1	0
46	Kotthanur	Kundadam	Tiruppur	1	0
47	Kovalanpottal	Madakulam	South Madurai	1	0
48	Kudalur	Uthamapalayam	Theni	1	0
49	Kudumiyanmalai	Iluppur	Pudukkottai	1	0
50	Maharajapuram	Tiruvaiyaru	Thanjavur	1	0
51	Maligaimedu	Panruti	Cuddalore	1	0
52	Mallapadi	Bargur	Krishnagiri	1	1
53	Mallingapuram	Uttamapalyam	Teni	1	0
54	Mangadu	Mettur	Salem	1	0
55	Mangalanadu	Aranthangi	Pudukottai	1	0
56	Mangudi	Sankarankovil	Tenkasi	152	152
57	Mangulam	Melur	Madurai	42	42
58	Marungur	Kattumannarkoil	Cuddalore	1	0
59	Mathagam	Avadaiyarkovil	Pudukkottai	6	6
60	Mayiladumparai	Pochampalli	Krishnagiri	1	1
61	Mela Sindalachery	Uttamapalyam	Teni	1	0
62	Melaikkudi	Paramakudi	Ramanathapuram	1	0
63	Melakarantai	Ettayapuram	Thoothukudi	1	0
64	Melsittamur	Gingee	Villupuram	2	2
65	Mettupatti	Vadipatti	Madurai	1	0
66	Milalainattam	Tiruviḍaimarudur	Thanjavur	1	0
67	Modur	Karimangalam	Dharmapuri	5	0
68	Mondippatti	Manapparai	Tiruchirappalli	1	0
69	Mottur	Tirupathur	Vellore	1	0
70	Mudrapalayam	Ozhukarai	Puducherry	1	0
71	Muthupatti	Thirumangalam	Madurai	1	0

S No.	Site	Taluk	District	No. of Sherds	Documented sherds
72	Mutukkankulam	Kariapatti	Virudhunagar	1	0
73	Nallur	Marungapuri	Tiruchirappalli	1	0
74	Nalur	Tiruchuli	Virudhunagar	1	0
75	Narayanadevanpatti	Uthamapalayam	Theni	1	0
76	Nariyutthu	Aundipatti	Theni	1	0
77	Nattam	Ambasamudram	Tirunelveli	1	0
78	Nedungur	Aravakurichi	Karur	79	79
79	Nerur	Manmangalam	Karur	1	0
80	Nochchiyam	Perambalur	Perambalur	1	0
81	Odugattur	Anaikkattu	Vellore	1	0
82	Omalur	Omalur	Selam	1	0
83	Palur	Panruti	Cuddalore	1	1
84	Parikkal Nattam	Ulundurpettai	Kallakurichchi	40	40
85	Pattaraiperumpudur	Tiruvallur	Tiruvallur	532	532
86	Perumpalai	Pennagaram	Dharmapuri	1028	1028
87	Perur	Perur	Coimbatore	1	0
88	Pidariyendal	Ramanathapuram	Paramakudi	1	0
89	Ponnagani	Kinaththukadavu	Coimbatore	1	0
90	Poompuhar	Sirkazhi	Mayiladuturai	45	45
91	Porunthal	Palani	Dindigul	97	0
92	Puduppatti	Uthamapalayam	Theni	1	0
93	Punaiyankudiyiruppu	Thirumayam	Pudukkottai	1	0
94	Ramasamypuram	Aranthangi	Pudukottai	1	0
95	Salamedu	Villupuram	Villupuram	8	8
96	Sambalmedu	Uthamapalayam	Theni	1	0
97	Sandaiyur	Nilakottai	Dindigul	1	0
98	Sanur	Madhurantakam	Chengalpattu	1	0
99	Sembiyankandiyur	Mayiladuturai	Nagapattinam	3	3
100	Sendamangalam	Villupuram	Villupuram	11	11
101	Sengottai	Vilathikulam	Thoothukudi	1	0
102	Senjikuppam	Thirunavalur	Villupuram	1	0
103	Senppaeratti	Karur	Karur	1	0
104	Siruthavur	Thiruporur	Chengalpattu	1	0
105	Sivagalai	Kodumudi	Erode	150	150
106	Sivagiriammankoyil	Kodumudi	Erode	1	0
107	Sulapuram	Peraiyur	Madurai	2	0
108	Sulur	Coimbatore North	Coimbatore	1	1
109	Suttukkeni	Villianur	Puducherry	1	0
110	T. Karungulam	Paramakudi	Ramanathapuram	1	0
111	T.Kalluppatti	Peraiyur	Madurai	1	0
112	Tennur	Sirkazhi	Mayiladuthurai	1	0

S No.	Site	Taluk	District	No. of Sherds	Documented sherds
113	Teriruveli	Sirkazhi	Mayiladuthurai	227	227
114	Thamaraikulam	Palani	Dindigul	15	15
115	Thelunganur	Mettur	Salem	4	4
116	Thirunathamkonram	Ulundurpettai	Kallakurichi	2	2
117	Thiyagadurugam	Kallakuruchi	Kallakuruchi	1	0
118	Thulukkarpatti	Ulundurpettai	Kallakurichi	4797	4797
119	Tirukkampuliyur	Krishnarayapuram	Karur	9	9
120	Tirukkolur	Eral	Thoothukudi	1	0
121	Tirukkovilur	Tirukkovilur	Tirukkovilur	14	14
122	Tiruvamattur	Vikkiravandi	Villupuram	1	0
123	Tiruvarur	Tiruvarur	Tiruvarur	1	0
124	Tiruverkadu	Tiruvallur	Tiruvallur	1	1
125	Tiruverumbur	Tiruvermbur	Trichy	1	0
126	Tiruvidaikazhi	Nagapattinam	Tarangampadi	1	0
127	Tittai	Sirkazhi	Mayiladuthurai	1	0
128	Uraiyur	Trichirappalli	Trichirapalli	71	0
129	Usur	Usur	Vellore	1	0
130	Uttukkadu	Uthamapalayam	Theni	1	0
131	Valasai	Gudiyattam	Vellore	37	37
132	Vallam	Thanjavur	Thanjavur	2	0
133	Vallanadu-Agaram	Srivaikundam	Thoothukudi	449	449
134	Vellalur	Coimbatore South	Coimbatore	2	2
135	Vellar	Omalur	Salem	1	0
136	Vembakkottai	Vembakottai	Virudhunagar	1	0
137	Veppathur	Tiruvidaimaruthur	Thanjavur	1	0
138	Vidoor	Vembakottai	Virudhunagar	1	1
139	Vinnamangalam	Arni	Tiruvannamalai	1	0
140	Viralur	Viralimalai	Pudukkottai	1	0
Total				15184	14168

Note: Several sites were reported to have graffiti-bearing sherds in explorations and excavations. Some of the sherds are not available for documentation. In that case, the number of sherds is given as one sherd. The real number of sherds may still be higher.

In recent years, scholars have increasingly turned their attention towards graffiti signs as they believe that studying these signs could provide some clues to understanding the basic structure of the Indus script or would help to understand the origin and evolution of the Brāhmī script in India. Attention to these signs was drawn as early as 1881 by Branfill (1881:1-12). Since then scholars like Foote (1890; 1901:17), Yazdani (1917:56-79), Hunt (1929:140-150), Numa Lafitte (1931:3-4), Wheeler (1948:188-194), Thapar (1957:86-88), Lal (1962:4-24), Seshadri (1971), Sundara (1975), Seneviratne (1984:237-307; 1992:99-131), Subbarayalu (1985:30-42), Gurumurthy (1999), Rajan (1991:47-54; Rajan and

Osmund Bopearachchi 2002:97-106; Rajan 2015), Nicole Boivin (2003:21-33) and many others made faithful attempt to understand these signs. All these studies could be placed under three categories of research. The first category of scholars earnestly attempted to link these signs with Indus signs. B.B. Lal's comprehensive work could be cited as the finest one in that direction (Lal 1962:4-24). He brought to light the significance of these graffiti signs from a broader perspective. He felt that nearly 89% of the Iron Age megalithic signs have parallels in Harappan and central Chalcolithic cultures. Conversely, 85% of the Harappan-Chalcolithic signs find their place in Iron Age culture (Lal 1962:21). While concluding, he said that to stress the point that signs do have a phonetic, syllabic or alphabetic value would indeed be presumptuous in the present state of our knowledge (Lal 1962: 24). He felt that commonness of the graffiti signs was perhaps due to the commonness of ideas between cultures. He wisely refrained from any speculation on the phonetic value of the signs. Irrespective of these important studies, the status of the study remains the same after a century and a half of its initiation. In recent years, however, attempts have been made to correlate these signs found in South India with the Indus script. Iravatham Mahadevan compared the graffiti encountered at Sulur and Sanur with that of the Indus script (Mahadevan 2001:379-386; 2007:80-87). The availability of limited information on graffiti signs due to the non-documentation of most of the sherds stalled further advancement in this study area. The present study is a modest attempt to fill this gap.

The post-firing graffiti signs made their appearance at Harappa (3300-2800 BCE), Kotdiji (2800-2600 BCE), and Balakot in pre-Harappan phases (Newberry 1987). Such pre-Harappan inscribed potsherds were reported at Mehrgarh, Nausharo, Sibri, Dauda-damb in the Baluchistan region of Pakistan, and Mudigak in southern Afghanistan (Parpola 2010: xvii-XII). In the process of documenting and deciphering the Indus script, Jagat Pati Joshi (Joshi *et.al.,* 1987), Sayid Ghulam Mustafa Shah (Shah *et.al.,* 1991), Asko Parpola (Parpola *et.al.,* 2010), and Mark J. Kenoyer and Richard H.Meadow Kenoyer (2010) emphasised the significance of these signs found in the Harappan context. Farmer, Sproat, and Witzel (2004:19-57), who contested the term script and the very existence of the writing system in the Indus Valley Civilization, also agreed that these were signs. In the Harappan context, the unidentifiable signs are generally reported as graffiti. Therefore, the quantity of graffiti is minimal. The availability of a well-developed script probably negated the usage of many graffiti signs. B.B. Lal and Asko Parpola opined that the origin of the Indus script could be traced back to pre-Harappan graffiti signs (Lal 1974:21-22). Most of the pre-Harappan signs consist of a single or a pair of signs. The placement of graffiti on the shoulder portion of the pot, both in the pre-Harappan and Harappan levels, indicates its significance. The contemporary and succeeding central Chalcolithic cultures, such as Ahar, Kayatha, Malwa, and Jorwe, yielded a small number ofṄ graffiti signs. However, the late Harappan sites like

Rangpur and Daimabad revealed many graffiti signs. Of the over a hundred graffiti signs encountered at Rangpur on the pottery of all the periods, most came from the late Harappan and transitional phase. Nearly eighty have no parallel to the Indus script (Ahmed 2014:370). The lustrous red ware that occurred at Rangpur is considered the transitional phase linking to the central Chalcolithic culture. Sites such as Ahar, Kayatha, Malwa, Jorwe, Navdadoli, Prakash, Nevasa, Inamgoan, etc., met with a limited number of graffiti signs. However, they demonstrated the existence of a cultural link between the previous Harappan culture and the later Iron Age through the Chalcolithic culture.

The common signs in Harappan, Chalcolithic, and Iron Age cultures are the sun, swastika, star, wheel, tree/leaf, ladder, fish, and some linear patterns. Some stylized animals are scarce in Iron Age culture. Another interesting feature is that the concentration of the majority of the graffiti is witnessed in Gujarat and Deccan, which led to the formation of the theory that the traces of the Indus script could be observed in later-day Iron Age graffiti signs of South India.

The prehistoric person attempted to share his thoughts through rock paintings. The rock engravings and paintings suggest that rock is considered one of the permanent media to register and transfer their ideas and beliefs to the next generation. The availability of many stone inscriptions suggests that the rulers used the rock surface as a powerful medium till late medieval times to communicate with their subjects. They might have used perishable materials, but we hardly get them due to their perishable nature. The latter-day pictographic representations owe much of their origin to these paintings. The availability of many seals and sealings in the Indus Valley suggests that Harappans might have written long inscriptions on perishable material, too. The Harappans used steatite, faience, clay, ivory, shell, and copper as a medium to register their impulse. In addition to these, they also used pots and potsherds to register their desires. In archaeological parlance, the unidentifiable signs are generally designated as graffiti. The recognized signs are labelled as a script. The pots with recognizable signs were documented as inscribed potsherds, whereas graffiti marks were placed in separate entities for a better understanding.

Nature of Graffiti

The bulk of graffiti is post-firing scratches and primarily written on the shoulder portion of the exterior surface of the pot. Most pots are tableware such as bowls, cups, and dishes. A few of them were also written on lids and big pots. In the case of lids and dishes, they were sometimes engraved on the interior surface. Identical signs are occasionally engraved on the same pot's opposite side. For instance, most of the four-legged jars, pots, ring stands, and

lids recovered at Porunthal are marked with such a phenomenon (Rajan and Yathees Kumar 2014:151-167) (Fig. 4.1). The intention of writing at visible points clearly emphasises that the engraver wants to convey the message through better exposure. Such is the case in later-day Tamiḻ-Brāhmī inscribed potsherds also. The signs' thickness and depth depend upon the medium's hardness and the nature of the stylus. Some of the signs are made twice or more to make deep cuts. Curved lines are less perfect than linear ones.

Direction of Writing

The writing of the Indus script on pots is generally right to left as demonstrated by Gadd and Smith, G.R.Hunter, A.S.C.Ross, A.H.Dani, B.B.Lal, Asko Parpola and I.Mahadevan (Gadd and Smith 1931:409, 427; Hunter 194:37; Ross 1939-40:554; Dani 1963:16; Lal 1966:52, 1967-68:15; Parpola 1969:18; Mahadevan 1977:10-15) but whether the contemporary non-Indus script or signs were written from right to left or left to right is not well demonstrated. However, the Iron Age graffiti signs were written from left to right. The position of graffiti at the end of the Tamiḻ-Brāhmī inscription and overriding signs or superimposition of the scratches suggest that they were written from left to right (Fig. 4.2).

Tamil Nadu Context

Unlike in the north, graffiti signs found in the Iron Age and Early Historic contexts of Tamil Nadu are widespread and almost uniform. Excluding the fragmentary signs, there are 42 base signs and 2131 composite signs with more than one base sign (see sign Table 5.1 in Chapter 5). Some signs evolved from a base sign, and some always occupy the composite sign's beginning or end (Rajan 1991:47-54). For instance, signs 2.0, 3.0, 11.0, 16.0, and 23.0 mostly occur in the initial position in composite forms. The sign 7.0 generally occurs in the terminal position in composite forms. Likewise, the sign 34.0 is generally found as a ligature. The initial, medial, and terminal positions of a particular sign in the composite signs are discussed and analysed in the chapter on concordance (see Chapter 6). In the Iron Age, these graffiti marks were noticed in two cultural contexts: graves and habitation. There is a marked difference between the graffiti collected from graves and that unearthed in the habitation. The grave findings are restricted to a few signs reflecting them as signs of a particular social group, probably a clan-based society. For instance, a group of burials had identical signs as one observed at Kodumanal and Porunthal (Fig. 4.3). The signs encountered in the habitation cuttings or settlement area are significant in numbers and varieties. Many signs recovered from habitation could not be assigned to a particular social group or clan; instead, they reflect the utility of the signs in the day-to-day affairs of the diversified social groups as a kind of communicative system.

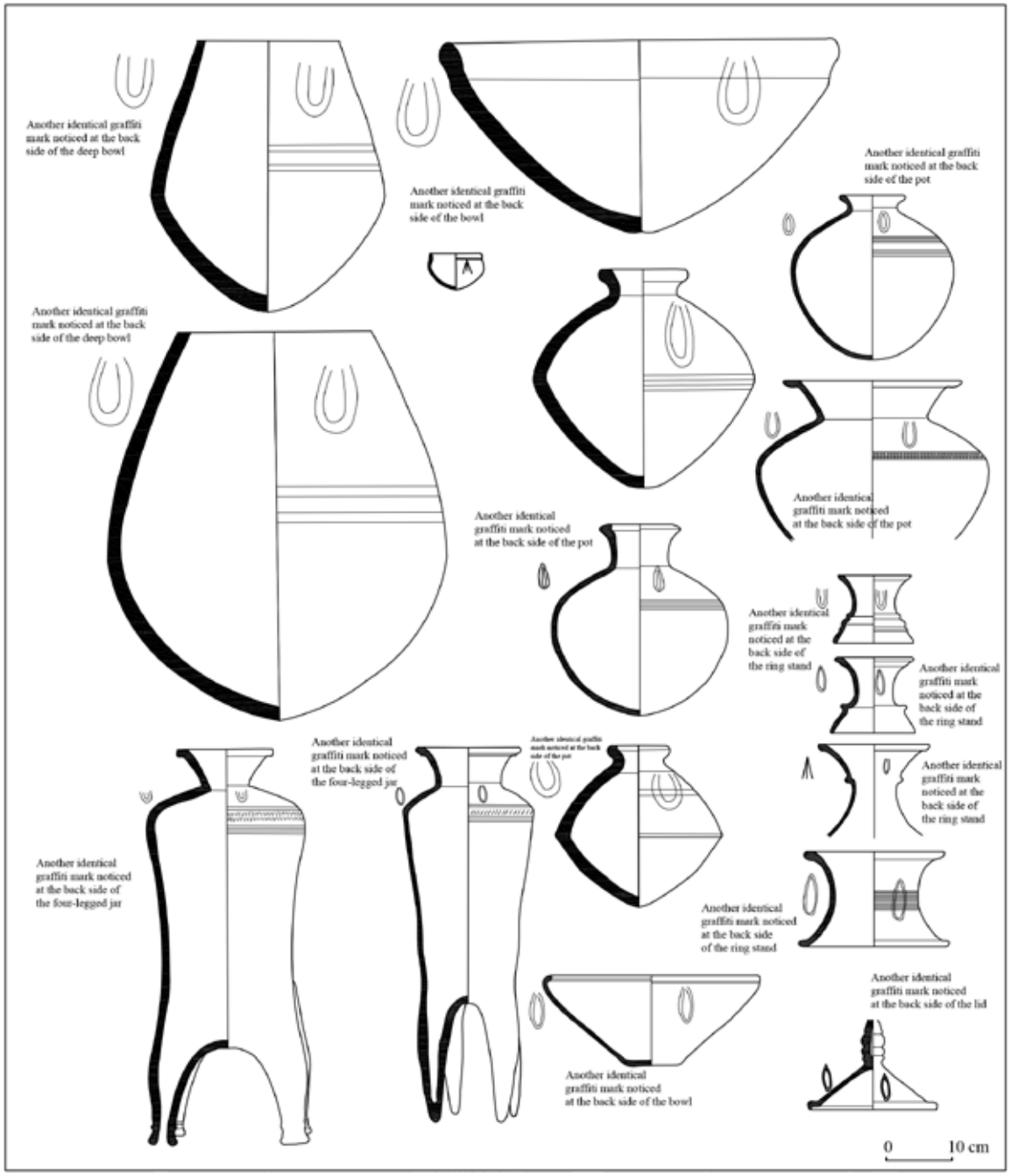


Fig. 4.1. Porunthal: Graffiti signs from grave MEG I

Fig. 4.2. Direction of writing

Burial No.	Description	Sign
MEG. I	Eight oblique lines meeting at the top. A wavy line superimposed over the second and third extreme left oblique lines	
MEG. II	A pair of three-pronged forks touching each other with a wavy line superimposed over the extreme oblique of the second sign. A variant of the sign 3.0	
MEG. III MEG. VII MEG. VIII MEG. X MEG. XII MEG. XIII MEG. XV MEG. XVI	Four vertical lines hanging from a horizontal line. A variant of the sign 10.1	
MEG. V MEG. IX MEG. XIV	A fork like sign. Two oblique lines meeting a central vertical line at the top, somewhat like a three-pronged fork with wavy lines superimposed over both the oblique lines. A variant of the sign 2.10	
MEG. VII	Four vertical lines hanging from a horizontal line	
MEG. XIV	There are two signs. The first sign is a fork like sign. Two oblique lines meeting a central vertical line at the top, somewhat like a three-pronged fork with wavy lines superimposed over the right oblique line. A variant of the sign 2.8. The second is a fork like sign. Two oblique lines meeting a central vertical line at the top, somewhat like a three-pronged fork with wavy lines superimposed over both the oblique lines. A variant of the sign 2.10	
MEG. XV	There are two signs. The first sign is a four vertical lines hanging from a horizontal line. A variant of the sign 10.1. The second is a two oblique lines placed on either side meeting at the centre of the vertical line. A horizontal line placed at the meeting point. A oblique line meets the tip of the vertical line and left end of the horizontal line	
MEG. IV MEG. VI MEG. XI MEG. XVII	Graffiti marks could not be recognised	

Kodumanal: Burial Graffiti Signs

Fig. 4.3. Kodumanal: Graffiti signs from the graves

It is pretty interesting to observe the contextual position of graffiti signs. They are found in different media like metal, stone, and pottery. During the Iron Age, these graffiti signs were found independently without being associated with any known scripts, particularly the Tamiḻi (Tamiḻ-Brāhmī) script. In Early Historic times, these signs are found with Tamiḻi (Tamiḻ-Brāhmī) script (Fig. 4.4). To understand the transformation/evolution of the Indus script, B.B.Lal traced back these graffiti signs from Early Historic to Harappan times passing through the central Chalcolithic period (Lal 1962:4-24). After B.B. Lal, Gurumurthy (1999) consolidated the data and published a monograph on graffiti. However, an exhaustive study has not been made on these signs until recently. The recent findings from Kodumanal, Keeladi, Perumbalai, Thulukkarpatti, Adichanallur, and a host of other sites encouraged us to go for such studies (Rajan 1991:47-54; 2002:97-105). As far as Tamil Nadu is concerned, they were found uniformly throughout the region (Fig. 4.5). All of them were post-firing in nature and primarily written on the shoulder portion of the pot. They were written from left to right as suggested by the overlapping scripts and also their position at the end of the personal name written in Tamiḻi (Tamiḻ-Brāhmī) script. At Kodumanal and Keeladi, several Tamiḻi (Tamiḻ-Brāhmī) inscribed potsherds carry signs at the end of personal names (Rajan 1991:47-54). It is to be emphasized here that the Tamiḻi (Tamiḻ-Brāhmī) scripts that are found in the subsequent period were also engraved on the shoulder portion only. This indirectly indicates the importance of graffiti in society. In the second stage, they were found in association with the Tamiḻi (Tamiḻ-Brāhmī) script but mostly marked at the end of a word or a sentence. This phenomenon is observed uniformly in all media. At Karur, they were found at the end of the personal name engraved on a ring, bangle, and potsherd. One of the most remarkable discoveries reported at Karur is of a flat broad strip of copper bent in the shape of a circular ring without the edges being soldered together (cylinder seal?) with eight discrete graffiti signs engraved on this seal in a row need our special attention as it is suggestive of some form of writing (Fig. 4.6) (Seetharaman 1994:86-87). Such more extended sequences of five signs are also reported in rock paintings at Kilvalai near Villupuram (Sridhar 2005:15-18) (Fig. 4.7). The composite nature of graffiti signs, as one noticed in several pots at Sanur, on a dish at Sulur, and a ring at Karur, suggests a kind of sequential writing.

It is interesting to observe a seal discovered in December 1980 with two rows of engravings at Anaikottai in the Jaffna peninsula of Sri Lanka (Raghupathy 1987:200-202). The bottom row had three letters in Tamiḻi (Tamiḻ-Brāhmī), and the top one had three graffiti signs (Fig. 4.8). There are three signs. The first two signs are identical, with a central vertical line branched off on either side from the middle, and a third sign with a dot with a right-facing half circle resembling a letter C. These three signs found on the seal are considered to have equivalent meanings to the three Tamiḻi (Tamiḻ-Brāhmī) letters that are found below. K. Indrapala, K.V. Ramesh, and P. Raghupathy identify them as bilingual or bilingual

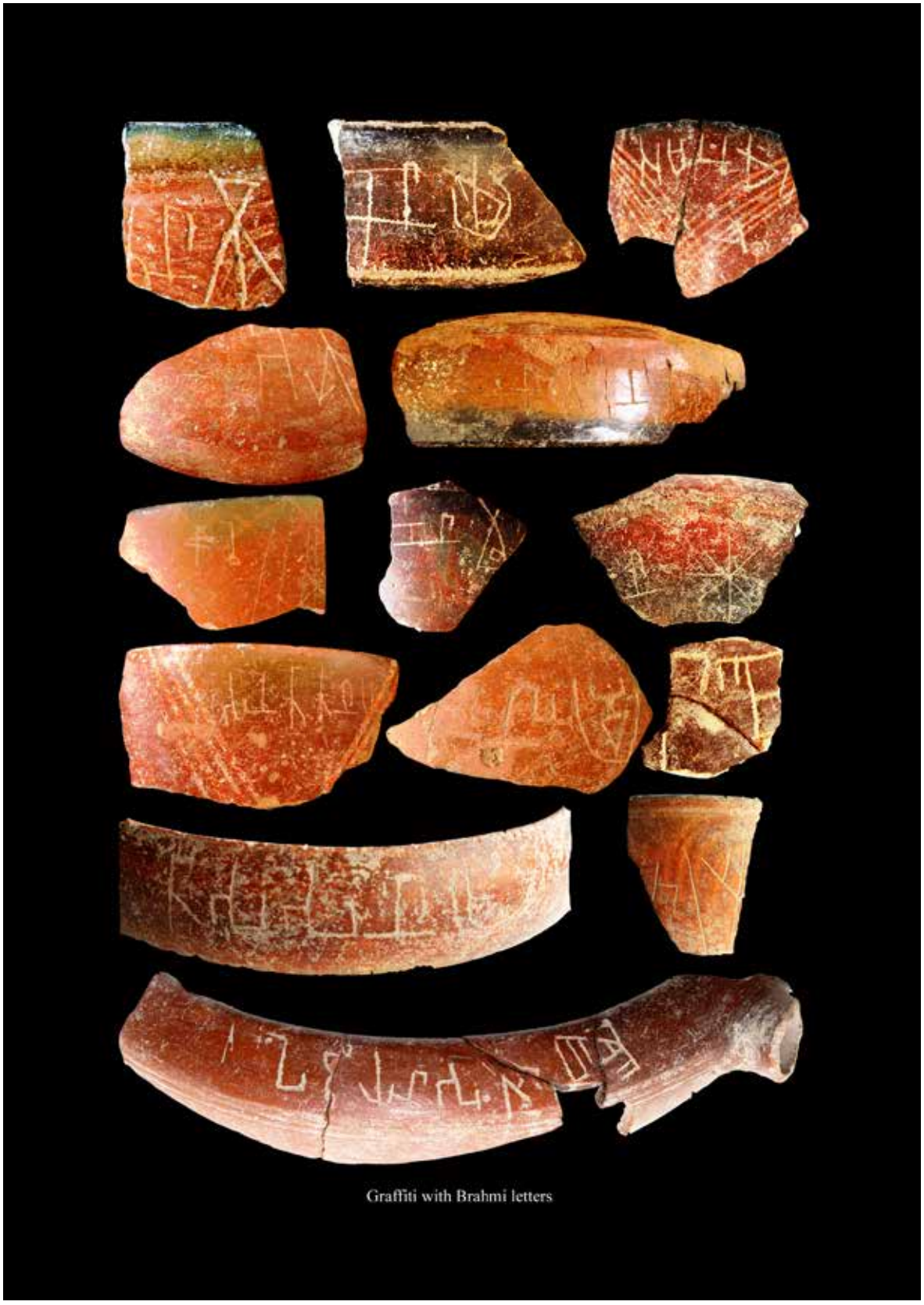


Fig. 4.4. Kodumanal: Graffiti engraved with Tamil script

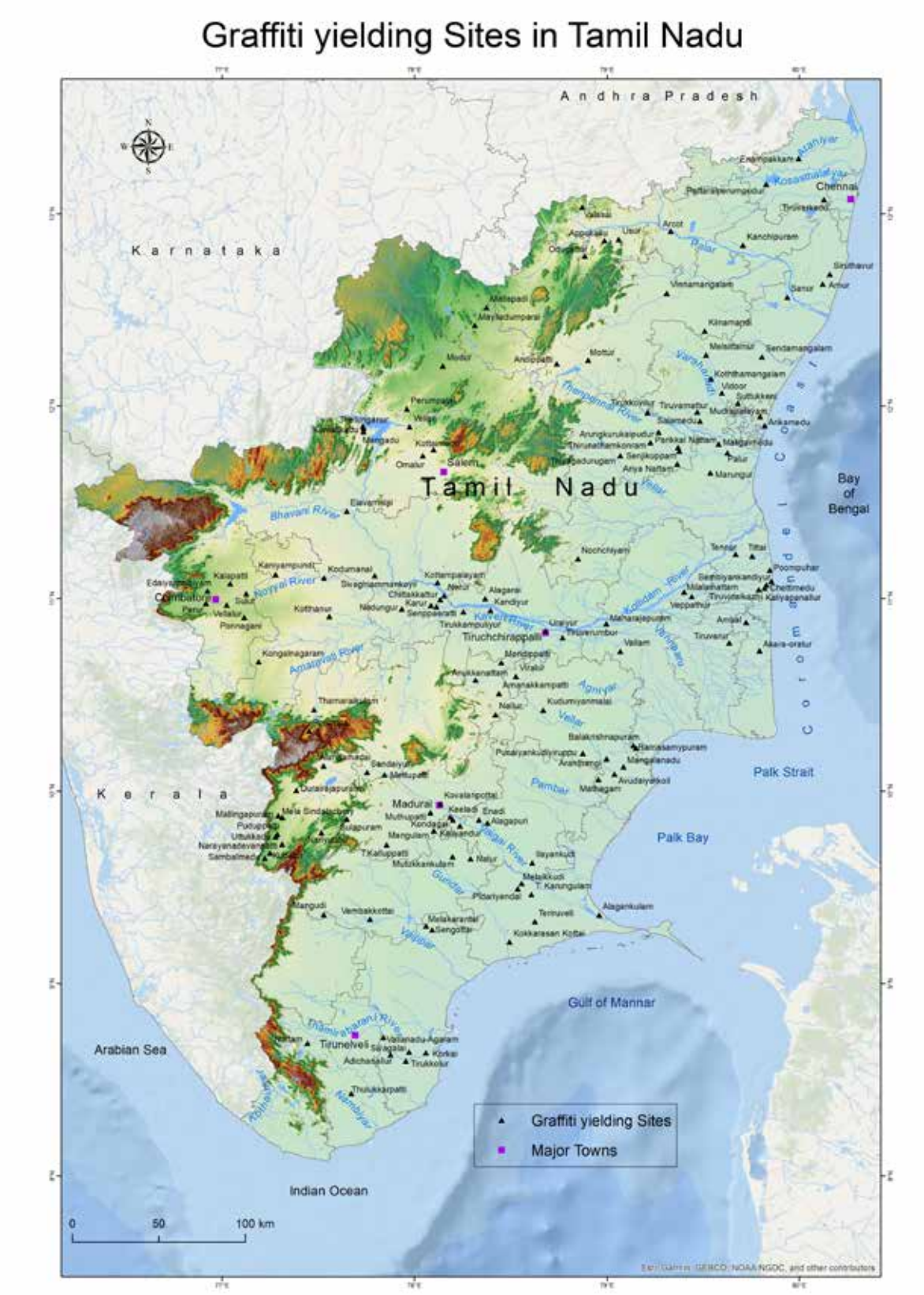


Fig. 4.5. Graffiti yielding sites of Tamil Nadu

Fig. 4.6. Karur: A copper ring with graffiti

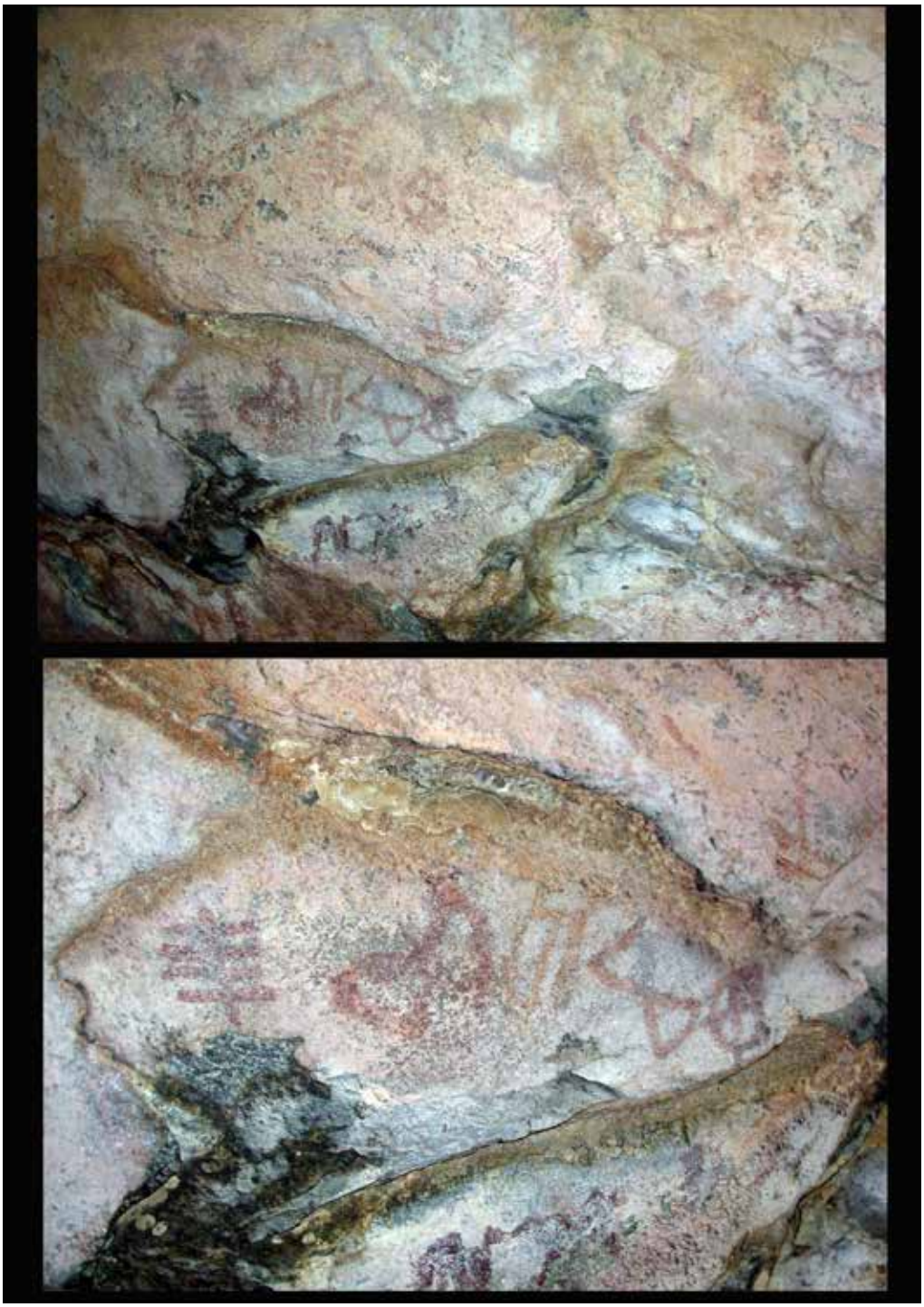


Fig. 4.7: Kilvalai: Graffiti signs in rock paintings

scripts of the same language. K. Indrapala and K.V. Ramesh believe that the three top-line signs evolved from the Indus signs, representing an ideographic form of writing, probably representing proper nouns rather than a phonetic system. An identical sign has also been noticed recently at Edakkal, occupying at the terminal position a Tamiḻi (Tamiḻ-Brāhmī) inscription (Mahadevan 2003:476-478) (Fig. 4.9). This sign received wider attention as it is found after the name of the Chera king Kadumi-puta-chera, one of the rulers of the three crowned kingdoms of Tamil Nadu. Such an identical sign is also found at Kodumanal, Karur, Korkai, Teriruveli, Thulukkarpatti, and other places (Fig. 4.10). It is found in pairs as well as in triple form (sign 9.11C and 9.12C).

Several base signs are found as individual signs, in groups as composites containing two or three identical signs in a row, and in association with other signs (Table 4.2) (see sign table in Chapter 5 and concordance in Chapter 6).

In the same way, several signs repeatedly occur at several sites. Several signs surfaced recently at Karur on rings, bangles, potteries, and coins (Seetharaman 1994:86-87). A sign found on a potsherd at Kodumanal is repeated on a punch-marked coin and in Tamiḻ-Brāhmī rock inscriptions at Kongarpuliyamkulam and Alagarmalai (Mahadevan 2003; Rajan 1994) (Fig. 4.11). Some of the signs always occupy a first position in the composite signs (sign 16.0 and 40.0, see concordance Chapter-6), and some of the signs mostly occupy first position (sign 2.0, 3.0, 9.0, 11.0, 14.0, 15.0, 21.0, 23.0, and 30.0). A few signs were found in contextual positions. Some are always found at a terminal position in a group of signs (sign 7.0). A particular sign is found in different media, geographical zones, and chronological contexts. Even the Tamiḻi (Tamiḻ-Brāhmī) inscribed potsherds that were found at Berenice on the Red Sea coast carry a graffito at the end of the inscription carrying a personal name (Mahadevan 1998:17-19). This evidence indirectly signifies the importance of the sign for the trader/sailor involved in transoceanic trade.

As suggested elsewhere by the author, these graffiti signs were not a potter's or tribal mark but had some other cultural significance. There is a considerable difference in the number of graffiti signs found in graves and their associated habitation. Several graffiti signs are observed in habitation, whereas in graves, it is limited to a set of signs. Based on evidence recovered from several sites, it is suggested that signs found in the burial are probably clan signs, whereas the graffiti found in the habitation had some more meanings (Rajan 1991:47-54; 2002:97-105). The findings of Kodumanal, Porunthal, Adichanallur, Thulukkarpatti, Perumbalai, and many other places further confirm this proposition (Rajan and Yathees Kumar 2014:151-167). Seneviratne (1984:237-307; 1992: 99-131) extensively studied these signs and identified some as clan or family signs. Irrespective of its ambiguity, the

Table 4.2 Signs as individual, in groups, and association with other signs

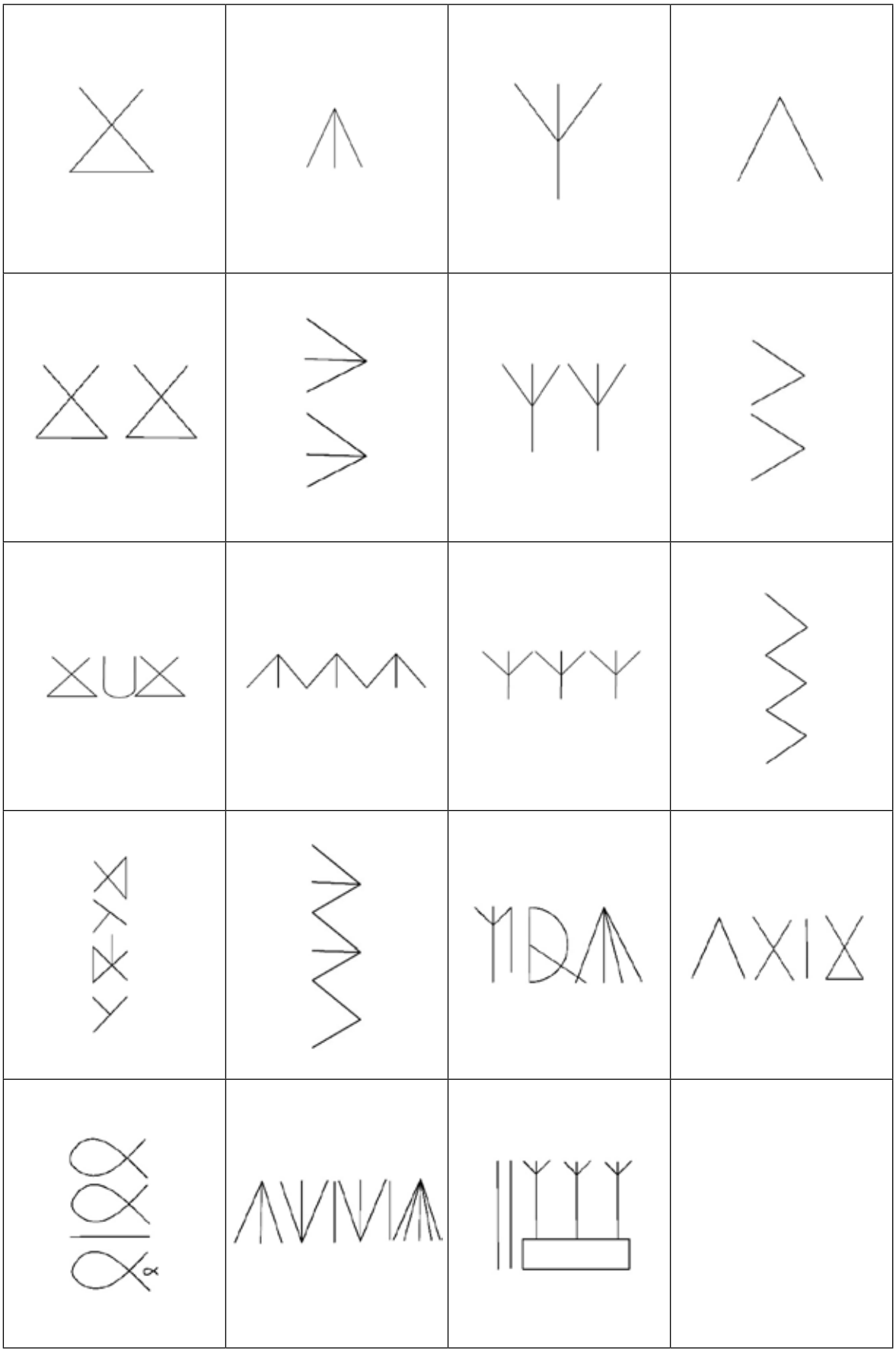


Fig. 4.8. Anaikottai: Bronze seal with graffiti and Tamiḻi script

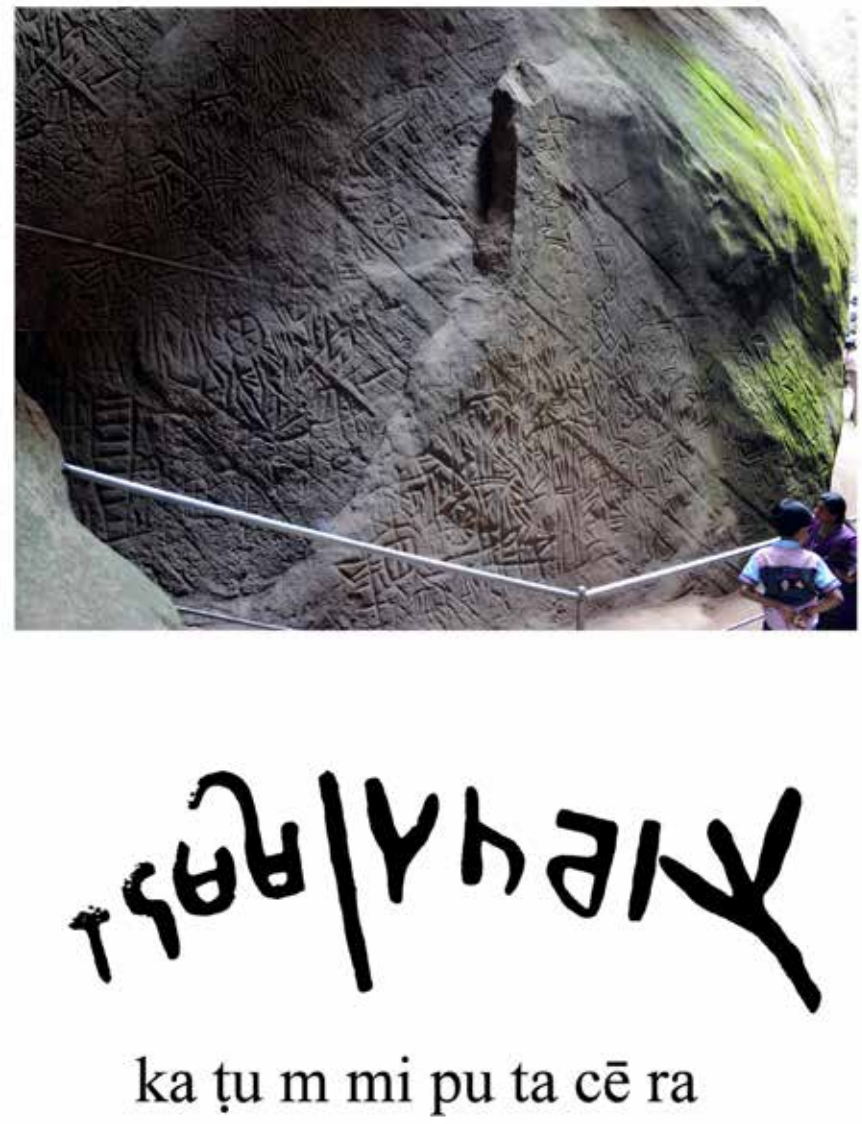


Fig. 4.9. Edakkal: Graffiti signs engraved at the end of the inscription

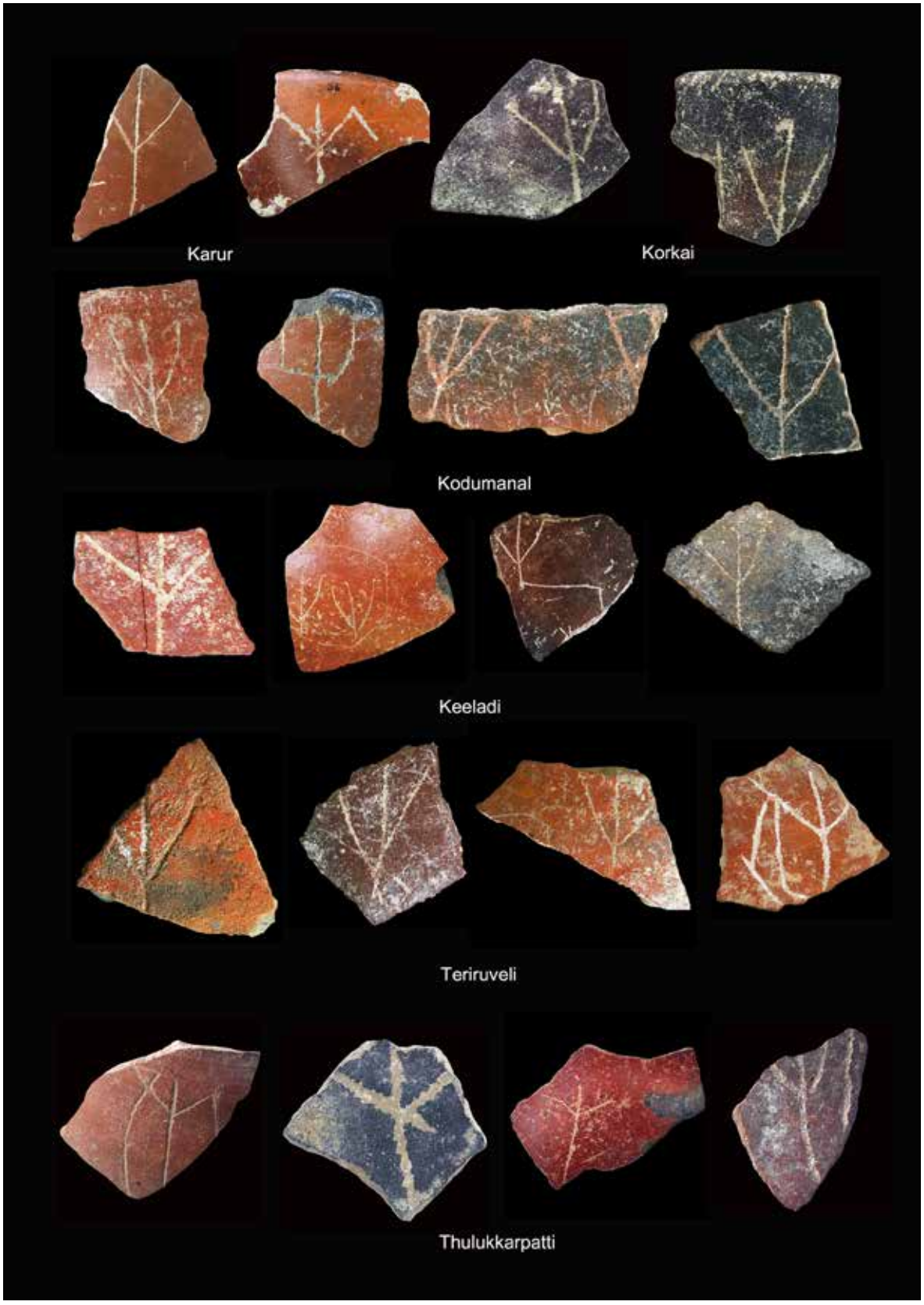


Fig. 4.10. Identical signs of Edakkal and Anaikottai found in other sites

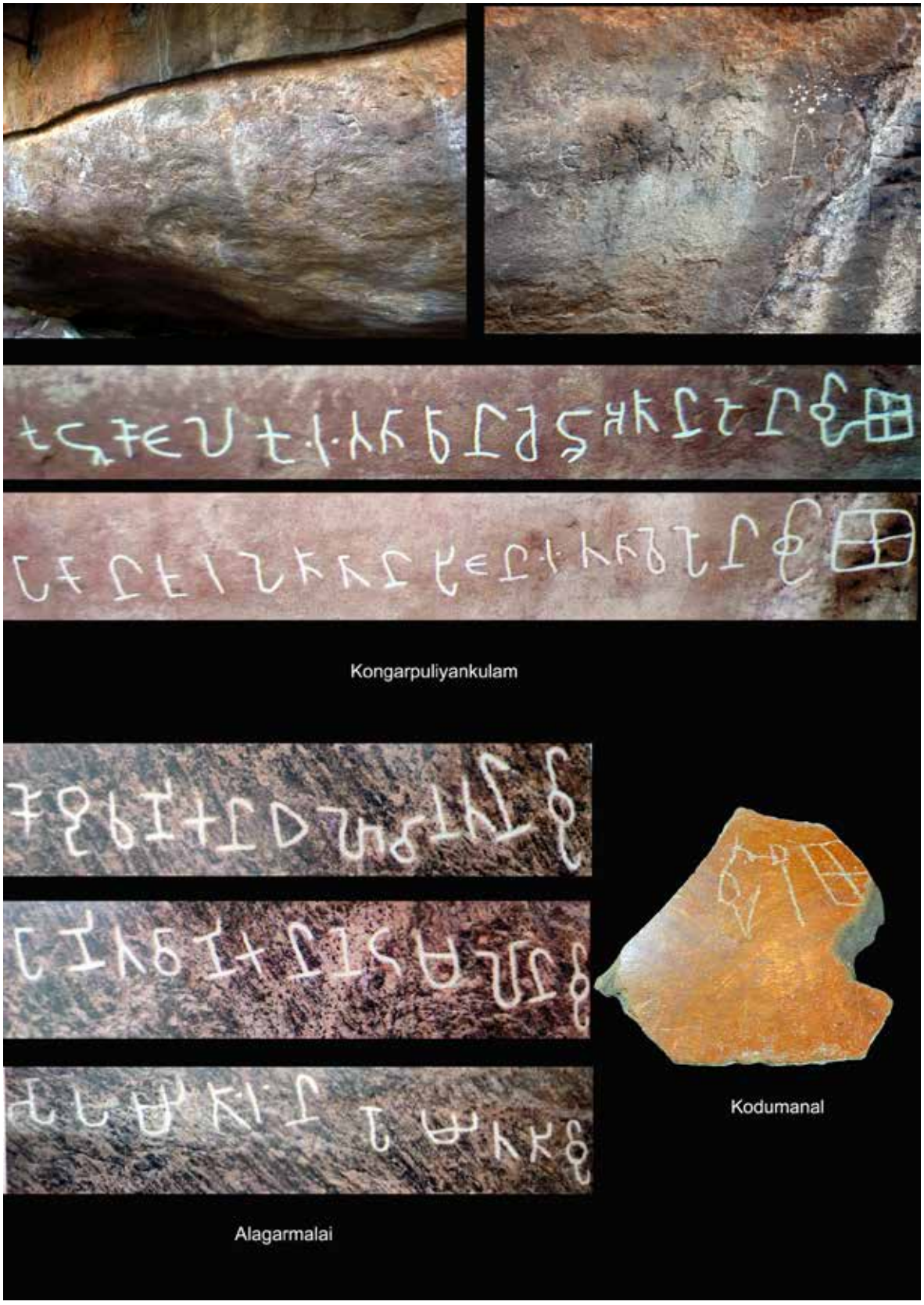


Fig. 4.11. Graffiti signs with inscriptions at Kongarpuliyankulam, Alagarmalai, and Kodumanal

significance of these graffiti signs cannot be brushed aside as mere scratches. The occurrence of these signs in varied cultural contexts covering a wider geographical area has forced us to consider them as an undeciphered script. The signs are found as individuals; in most cases, two/three signs are placed as a composite. Four or five signs are found occasionally, and six are rarely noticed (see concordance Chapter 6). Most probably, these signs may carry proper or personal names.

A modest comparative study on the graffiti signs of Sri Lanka and Tamil Nadu shows the striking similarity between these two regions (Rajan and Osmund Bopearachchi 2002:97-105). As observed in Tamiḻi inscriptions, Sri Lankan Prakrit inscriptions are also noticed with graffiti signs (Figs. 4.12-4.13). Paranavitana identified 38 symbols/signs and felt that these symbols had some connection with the content of the inscription. He connects the *svastika* symbol with the name Tisa, as an ideogram or a phonogram. Further, he elaborates that the symbol appears to be a modification of a symbol of frequent occurrence in the Indus script (Paranavitana 1970:xxv-xxvi). The non-Brāhmī signs of Sri Lanka were studied, and the nearest parallel forms were found in the Iron Age and Early Historic pottery of peninsular India. Deraniyagala (1972:46-169) has tabulated some of the graffiti signs of Sri Lanka. Seneviratne (1984:237-307; 1992:99-131) extensively studied these signs and identified some as clan or family signs. The excavations at Kodumanal and Ridiyagama yielded many potsherds bearing identical graffiti (Rajan and Osmund Bopearachchi 2002:98-105). The excavations at Tissamaharama yielded many graffiti signs associated with nearly 125 Prakrit-Brāhmī inscribed potsherds. Falk, who examined the signs, felt that it could be a logogram (Falk 2014:86). Unlike Kodumanal and Keeladi's findings, the practice of engraving the graffiti sign at the end of the inscription is sporadic except at one or two places where the jar-like sign is engraved (Falk 2014:72 and 79; ins. nos. 82 and 106). The inscriptions are predominantly Buddhist, probably restraining them from engraving on the pot.

Excluding the fragmentary graffiti, about 42 complete or almost complete base signs and 2131 composite forms were documented from 45 sites out of 140 reported sites (Table 4.1; see sign table Chapter 5). Besides, signs that occurred very rarely, with one or two instances designated as field symbols. There are 124 field signs. The base signs, though in a limited way, were repeated at several sites in Tamil Nadu. These post-firing graffiti are found on the shoulder portion of the vessels, but ring stands and dishes are found at the base and sometimes on the inner side. Most of them are engraved on the shoulder portions of black-and-red ware pottery. The inscribed sherds, which are identifiable as Tamiḻi (Tamiḻ-Brāhmī) letters, are dealt with separately in Chapters 10 to 14. Here, the non-Brāhmī signs alone are discussed. The graffiti marks found at the terminal position associated with Tamiḻi inscriptions are dealt with at both places.

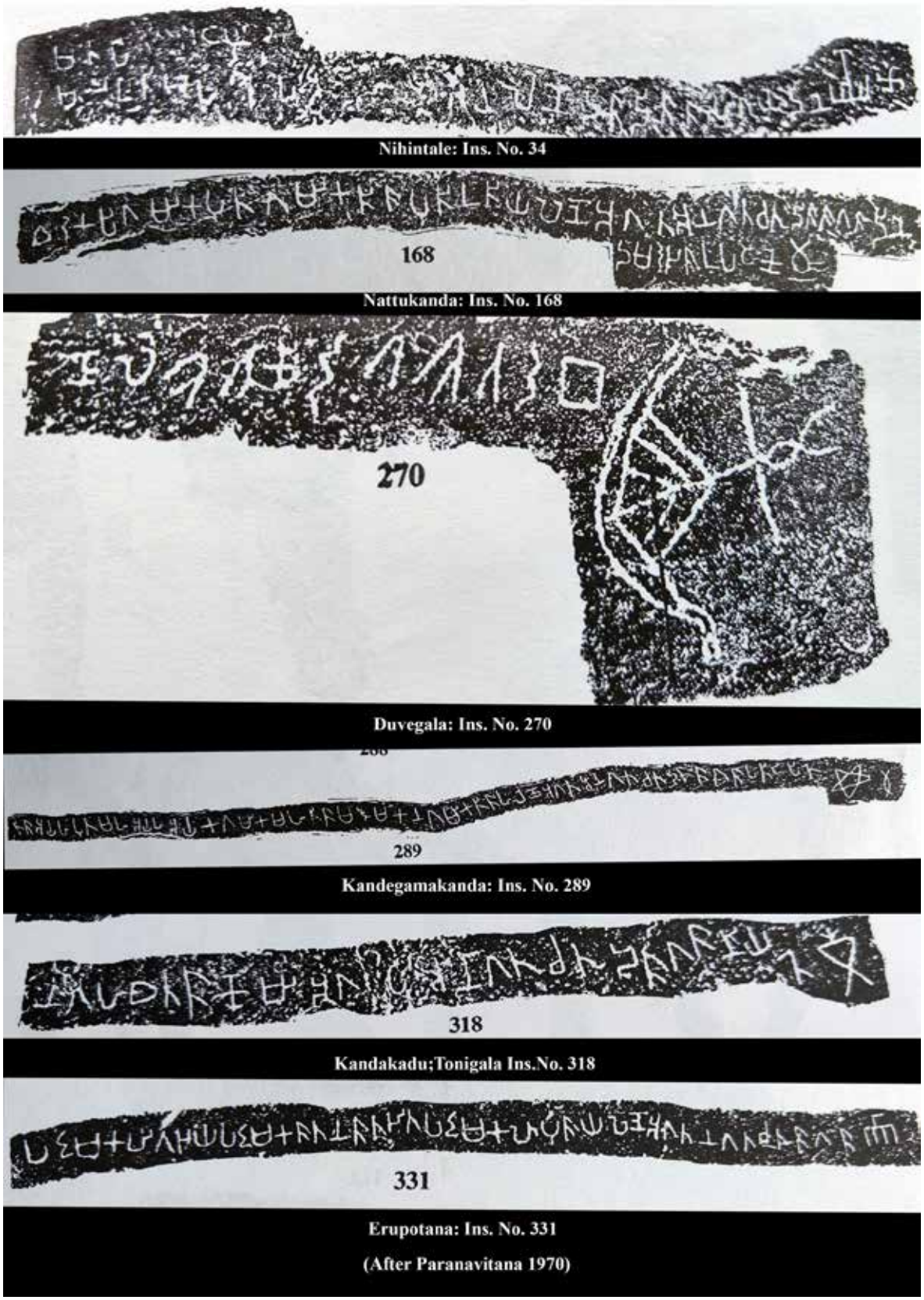


Fig. 4.12. Graffiti signs in Sri Lankan inscriptions

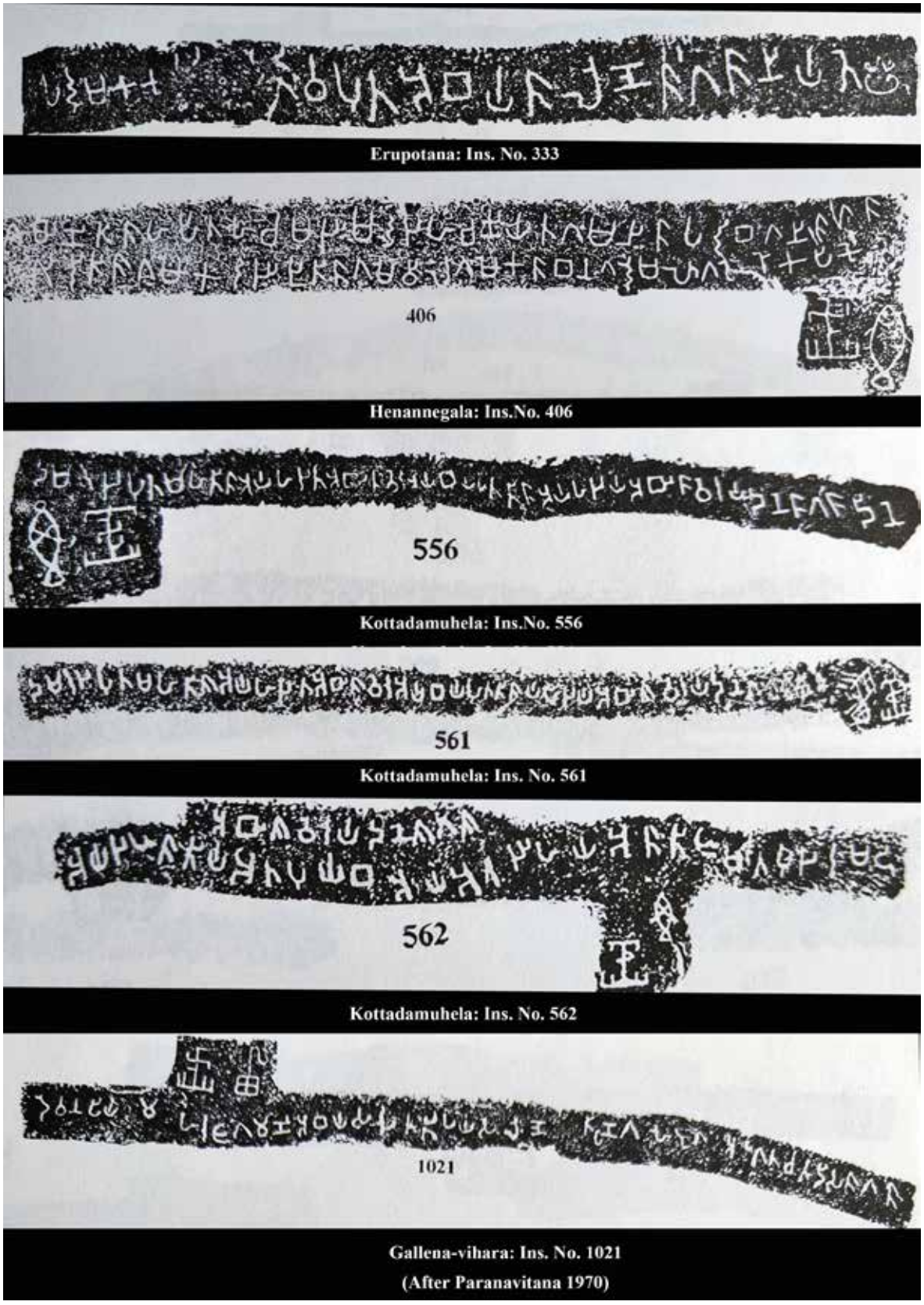


Fig. 4.13. Graffiti signs in Sri Lankan inscriptions

The accumulated data and the analysis suggest a strong cultural linkage between different cultural zones. Specific attempts are made to understand these graffiti signs. As stated earlier, graffiti signs are noticed in two cultural contexts. The first came from graves, and the second was observed in habitation cuttings.

Burial Context

In the early stage of investigations, most of the graffiti signs were retrieved from graves, particularly from Iron Age megalithic graves. The associated settlements are rarely excavated, preventing scholars from getting a complete picture of graffiti signs. Based on limited data, the scholars classified the graffiti signs broadly under the following heads:

1. Potter's mark
2. Owner's mark
3. Clan mark

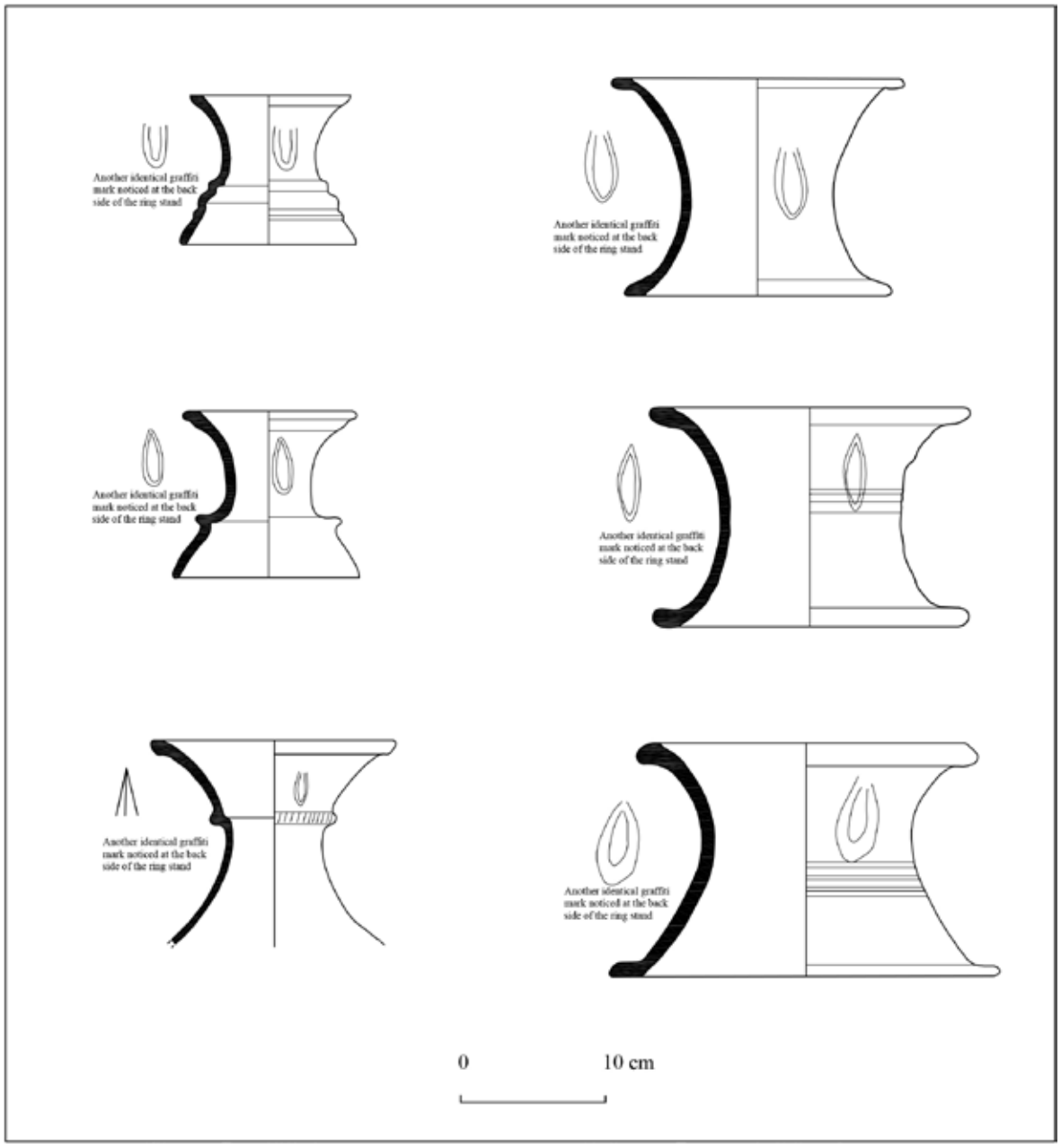
There are several signs repeated at various sites such as Kodumanal, Keeladi, Adichanallur, Perumbalai, Thulukkarpatti, Karur, Uraiyur, Porunthal, Vallam Kilnamandi, and many other places. If we consider them as a potter's mark(s), then one has to conceive/accept the fact that there were a large number of potters' families working at different sites in different cultural zones, or they produced pots at one place and supplied them to the distant sites as finished products with their identical signs marked on the pots. This is rather doubtful or not feasible. Furthermore, all the signs are post-firing in nature. If they were potter's marks, they would have easily engraved them when the pot was in leather condition. Moreover, there are several instances in which the signs are found in association with Tamiḻi (Tamiḻ-Brāhmī) inscriptions, such as cave inscriptions, pottery inscriptions, seals, and coins. Except for the pot, the artisans created the remaining items at the direction of the sponsors. The potters may not have such a level of social reach. Secondly, graffiti signs fail to find their place in all the pots. If it is a potter's mark, one should get their mark on all the pots they supply. Thirdly, a particular kind of sign is encountered only in a particular type of grave, as one observed at Kodumanal and Porunthal, suggesting they were family/clan graves. This also goes against the proposition of the potter's mark. Thus, the prevailing evidence fails to convince us that it is a potter's mark.

If we consider it the owner's mark, one sign or set might have belonged to a particular owner or family. Instead, a sign or a set of signs is reported and repeated within a site and at different sites spread over a wider geographical area. So, the owner's mark concept also stands invalidated in the given circumstances.

One may consider the graffiti signs encountered in the graves of a particular site as clan signs. However, there is also an element of uncertainty in this hypothesis. Many of the graves found at far-off distances also have identical signs. Whether the clans were spread out in different cultural zones needs to be assessed and addressed before conclusions can be reached. The identical graves opened at Kodumanal and Porunthal met with identical signs. The distribution of similar signs in identical graves with comparable rituals supports this hypothesis to some extent, but still, one needs more data to stress this point categorically. Nevertheless, the same proposition cannot be applied to the graffiti signs unearthed in habitation cuttings. As stated earlier, identical signs are reported at several places in different geographical zones and chronological and cultural contexts. Therefore, assuming that a particular clan occupied a wider geographical area is impossible. A site-specific meaning may be derived from the graffiti unearthed in graves. The lack of data further hinders our understanding of the true nature of these signs.

The two excavated sites, Porunthal and Kodumanal, provided a good picture of the nature of graffiti signs noticed on the grave goods. The Porunthal graves were met with several graffiti signs. There is a slight contextual variation between the Kodumanal and Porunthal graffiti. At Kodumanal, the fact that each megalithic burial was associated with a specific sign engraved on all its pottery. Further, a group of graves had identical signs. For instance, a sign containing four vertical lines hanging from a single horizontal line was seen in six graves (MEG-III, VII, VIII, X, XII, XIII, XV, and XVI). Likewise, two oblique lines meet at the top of the central vertical line, with a wavy line on the oblique lines also noticed in three graves (MEG-V, MEG-IX, and MEG-XIV) (Rajan 1994:118-119) (Fig. 4.3). Such an incidence is also repeated at Porunthal, thereby suggesting some uniformity.

At Porunthal, the double line U-shaped sign is found in MEG-I and MEG-II (Figs. 4.14-4.16). Interestingly, both graves are structurally identical and are located close to each other. These two graves are a transepted variety with a passage on the east against the northern chamber of the transepted cist (Fig. 4.17). The cultural deposit and the rituals performed are also similar. Thus, these graves must have been raised for somewhat related social groups, probably a clan. In association with this sign, a three-pronged fork meeting at the top is also found in one or two pots in MEG-I. The reason/logic behind this mark could not be discerned now. Likewise, MEG-II also had an X-shaped sign before the usual double-line U-shaped sign in one of the pots. The grave MEG-III was met with three base signs and their variants (Fig. 4.18). The first is a star sign. The second is a two-pronged fork meeting at the top, filled with horizontal strokes. The third one is identical to the second sign but with an additional horizontal line hanging with two parallel vertical strokes on its two extreme ends, placed on the top of the sign. These signs are found


Another identical graffiti mark noticed at the back side of the ring stand
Another identical graffiti mark noticed at the back side of the ring stand
Another identical graffiti mark noticed at the back side of the ring stand
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Another identical graffiti mark noticed at the back side of the ring stand
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0
10 cm

Fig. 4.14. Porunthal: Graffiti signs from grave MEG-I

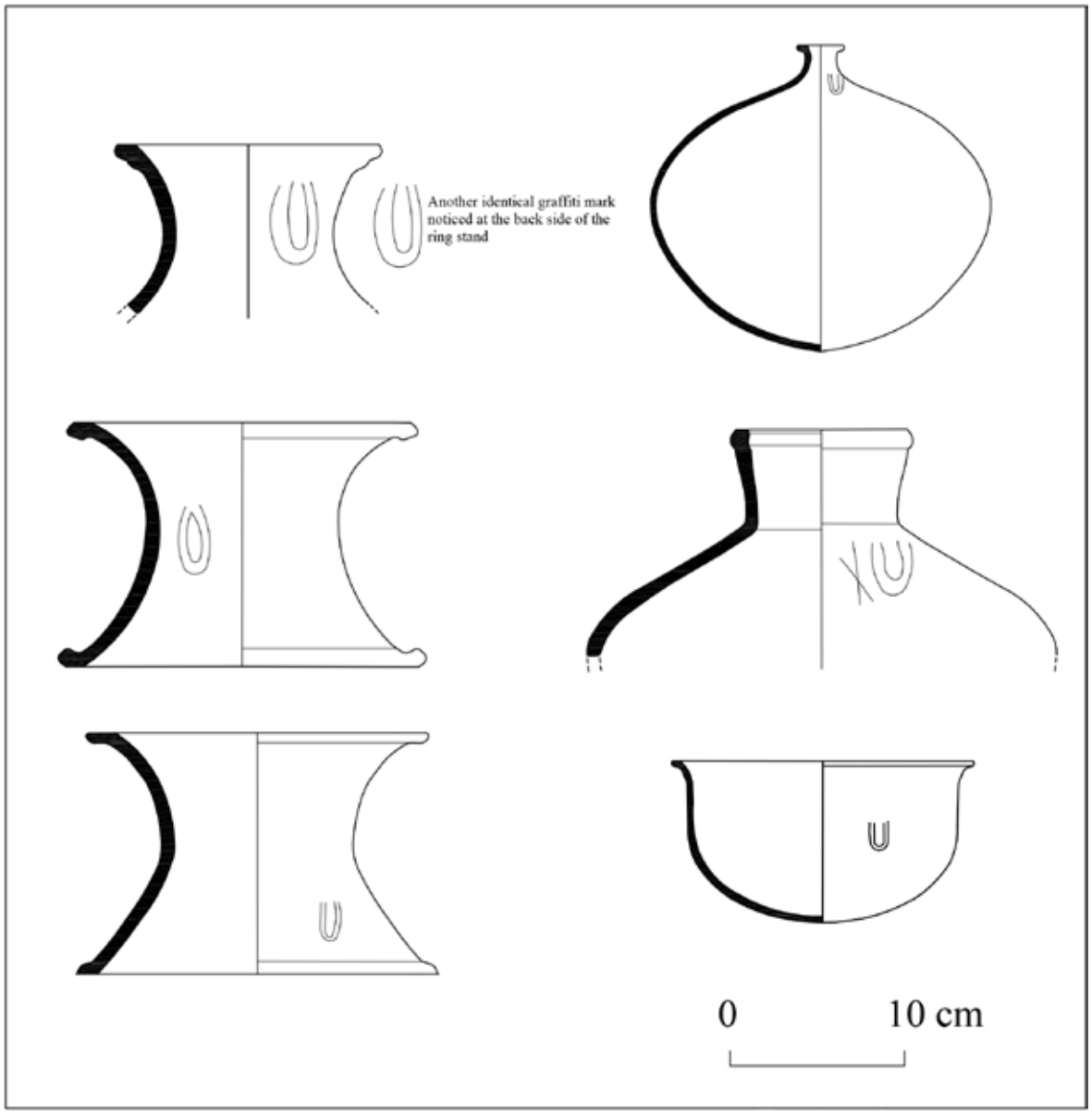

Fig. 4.15. Porunthal: Graffiti signs from grave MEG-II

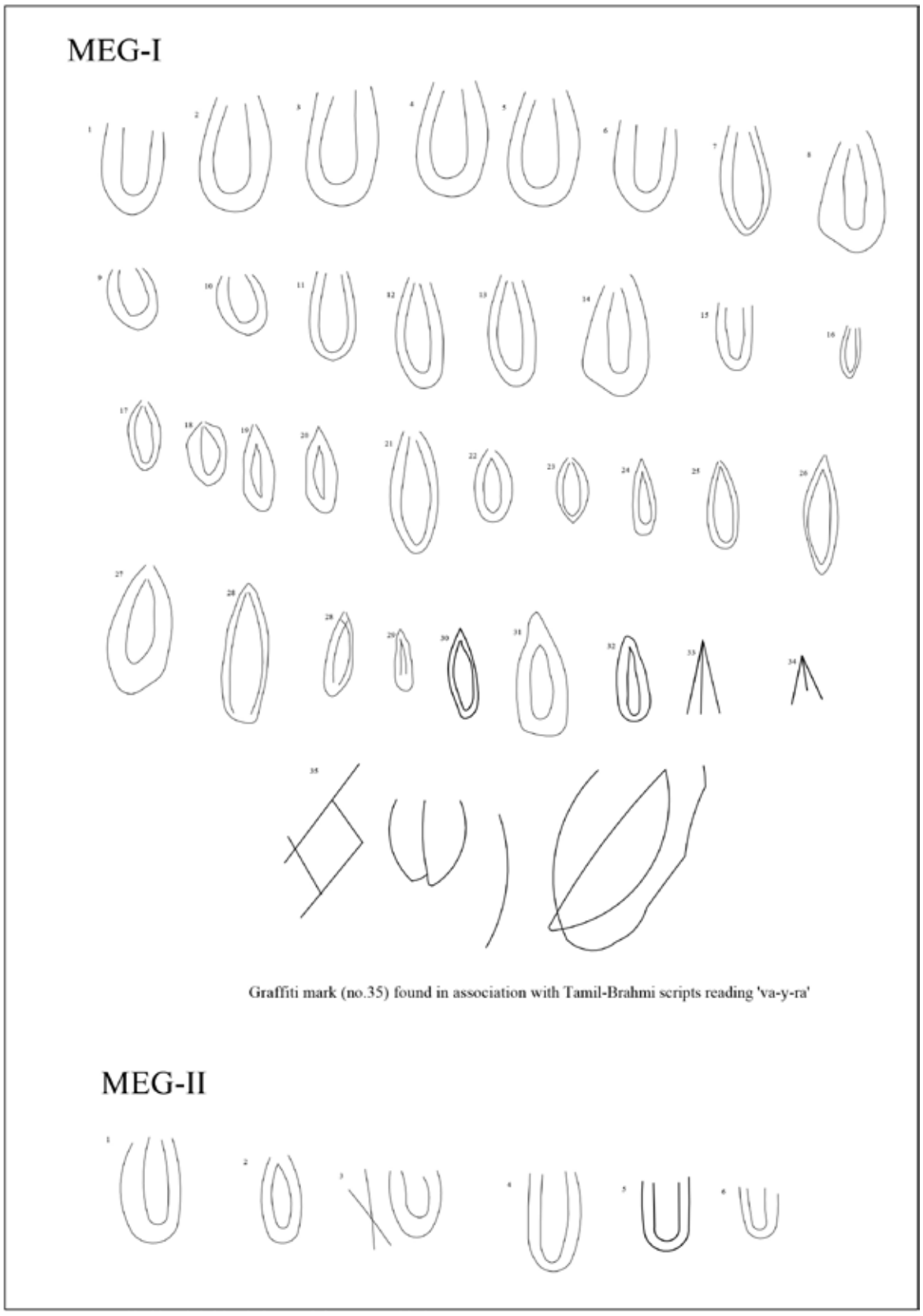

Fig. 4.16. Porunthal: Graffiti signs from grave MEG-I and MEG-II

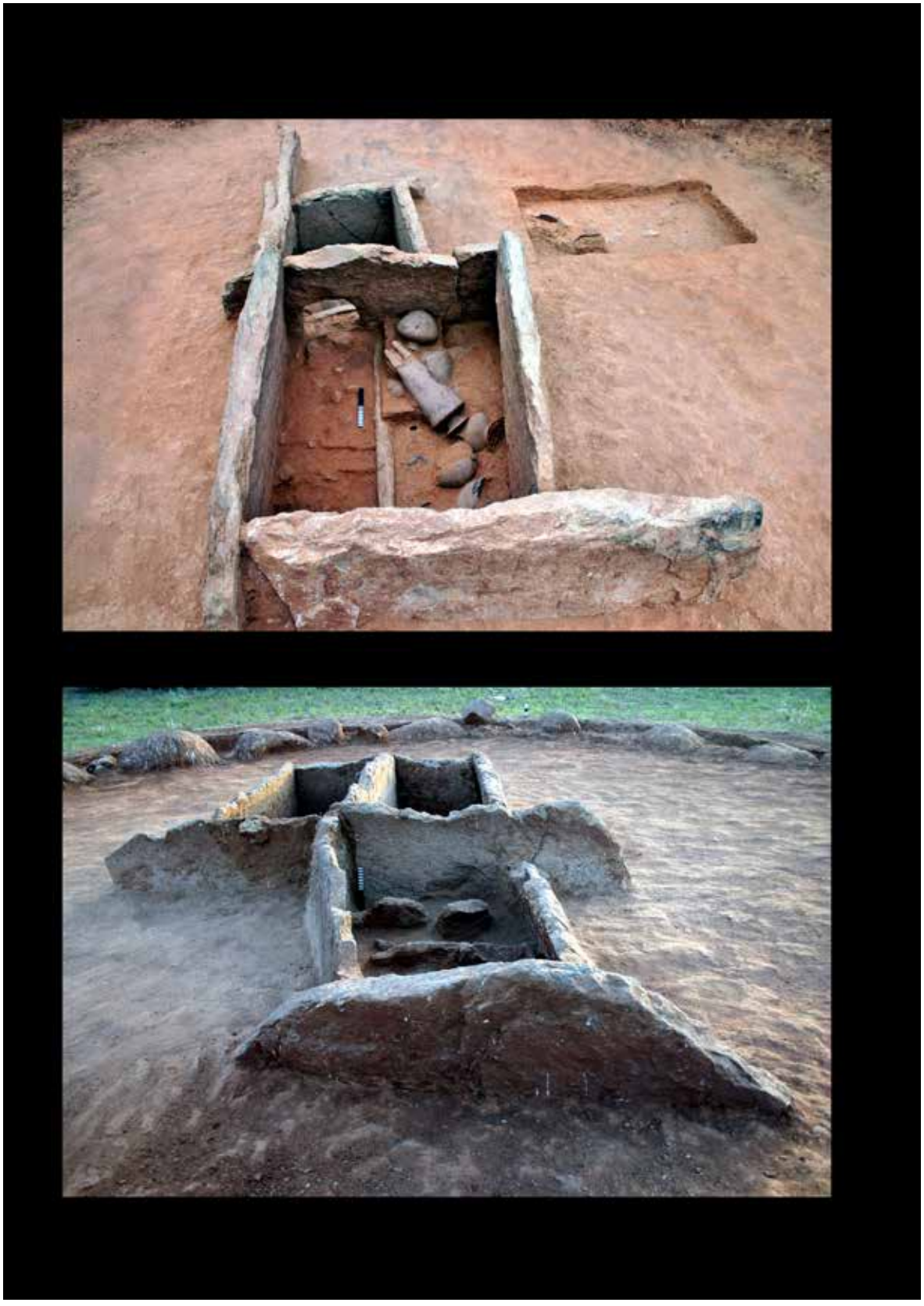

Fig. 4.17. Porunthal: Excavated graves (MEG-I and MEG-II)

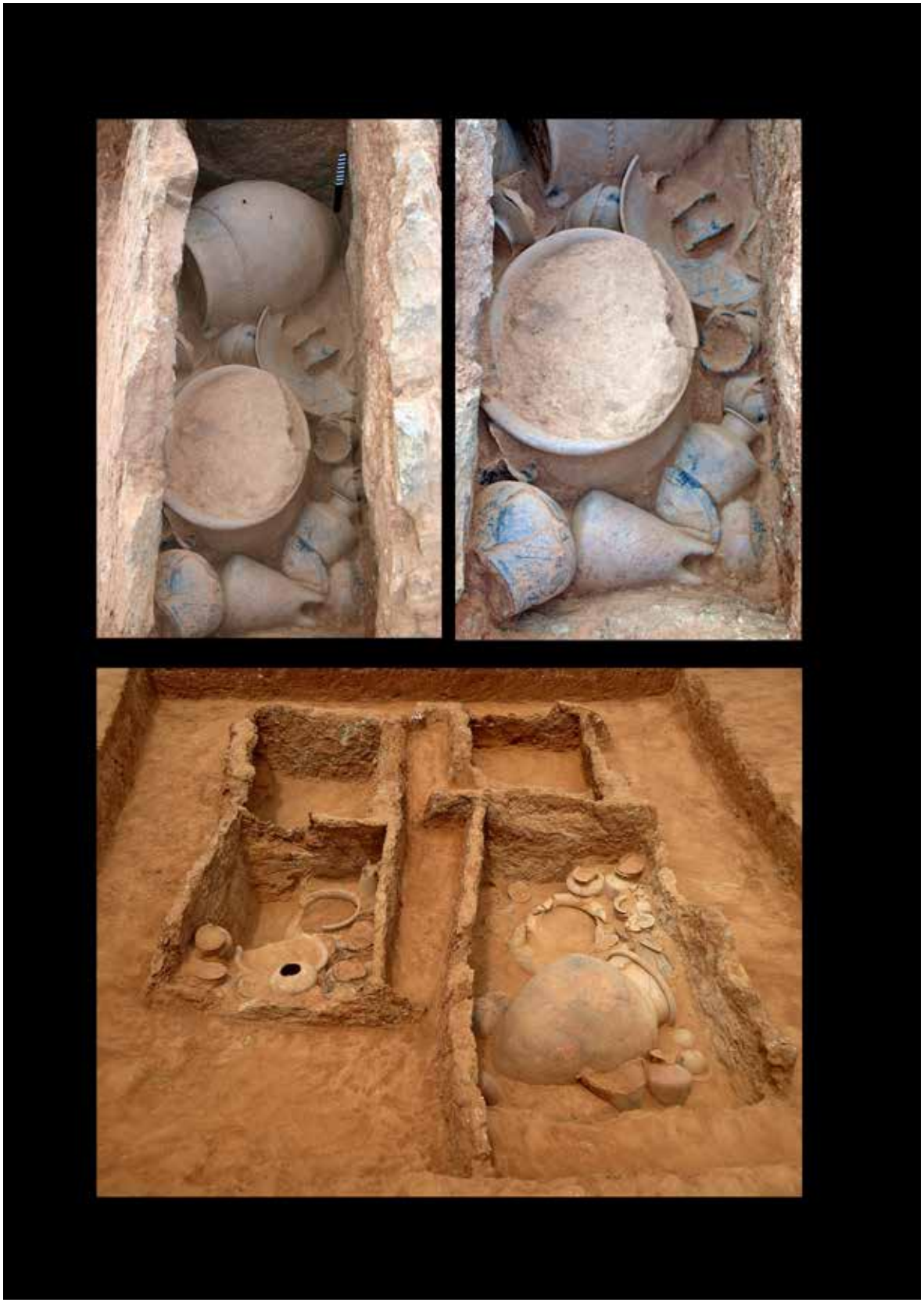

Fig. 4.18. Porunthal: Excavated graves (MEG-III and MEG-IV)

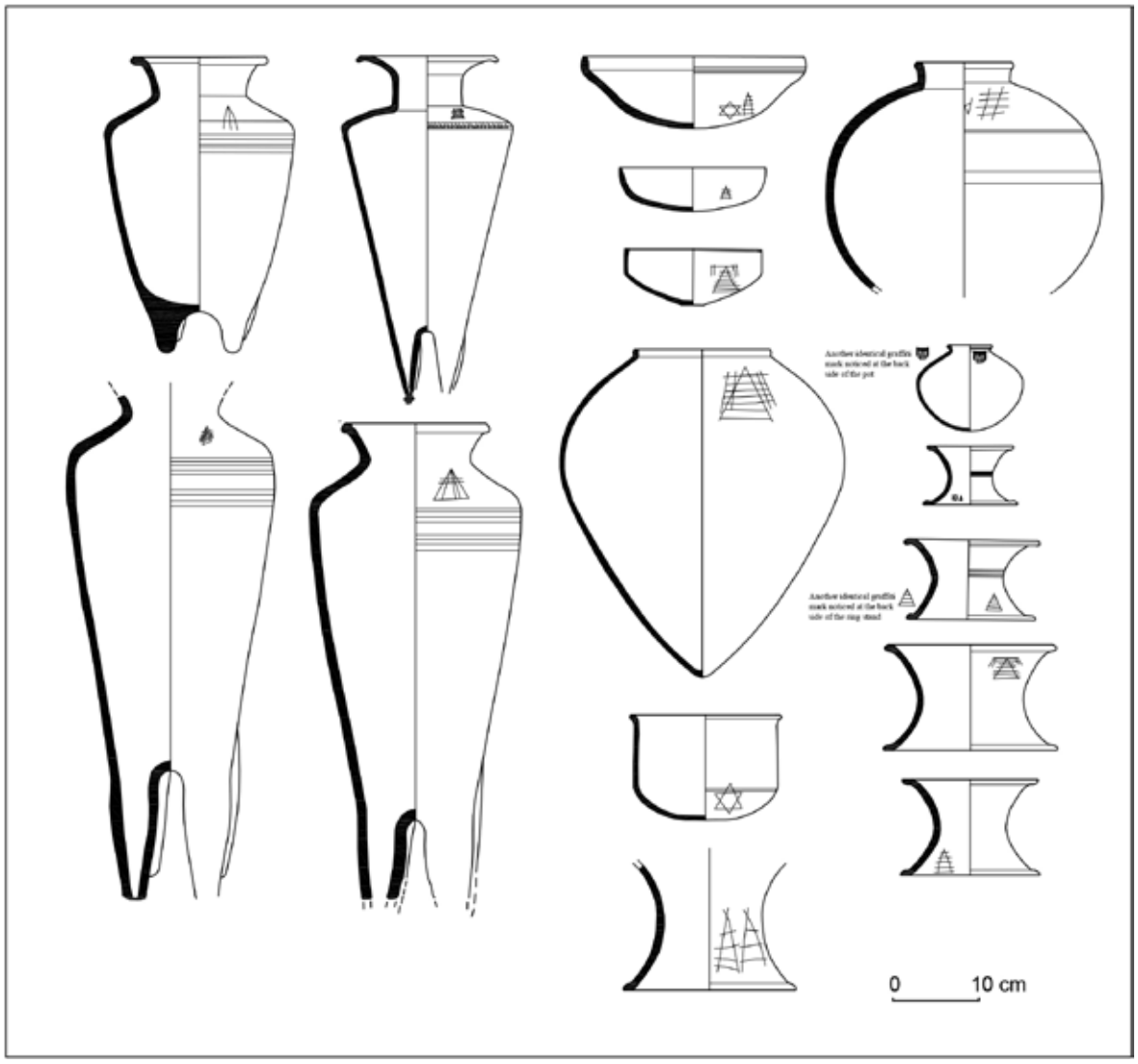

Fig. 4.19. Porunthal: Graffiti signs from grave MEG-III

individually or in combinations of two signs (Fig. 4.19). Besides, MEG-III yielded a solitary V-shaped sign followed by a ladder.

The grave MEG-IV met with four or five base signs and their variants (Figs. 4.20-4.21). The first is a two/or three-pronged fork meeting at the top. The second one is a two-pronged fork meeting at the top and is filled with horizontal strokes, but with an additional horizontal line hanging with two parallel vertical strokes on its two extreme ends, placed at the top. The third one is two parallel horizontal strokes hanging with two parallel vertical strokes on their extreme ends. The fourth one is an X-shaped sign. The fifth one is a wavy line sign placed in a slanting position. These signs are found individually or in combinations of two signs.

The sign, consisting of two-pronged forks meeting at the top, is filled with horizontal strokes, and with an additional horizontal line hanging with two parallel vertical strokes on its two extreme ends, is common for both graves. Both the graves were made of double cists, each cist interned with two urns. Both graves are structurally similar, and the rituals performed in the graves are identical. Therefore, the sign found in both graves carries a specific meaning.

The graffiti signs recovered from all four graves had a specific pattern. Such a situation is also witnessed at Kodumanal. The six graves (MEG-III, VII, VIII, X, XII, XIII, XV, and XVI) excavated at Kodumanal had identical signs of having four vertical lines hanging from a single horizontal line. Two other graves having a sign of two oblique lines that meet at the top of the central vertical line with a wavy line on the oblique lines are noticed in three graves (MEG-V, MEG-IX and MEG-XIV) (Fig. 4.3). Such a situation is also observed in other sites like Sanur (Banerjee and Soundra Rajan 1959:32, fig.8), Raigir (Hunt 1924), Jadigenahalli (Seshadri 1960:23), Feroke (Aiyappan 1933:308), Kudatini (Boivin 2003:21-33), Odugattur (Richards 1942), Suttukeni (Casal and Casal 1956), Perumalmalai (Lafitte 1942), Gachibowli, Khammam (Rao 1988; 2010:102-111) and many other sites (Figs. 4.22-4.24). The sign-like parallel/double "U" signs are reported at Porunthal, T. Narasipur, Savandrug, Feroke, Sanur, and other sites. If it is the owner's mark, it is difficult to assume that these signs are present in multiple graves and cover a more expansive geographical space.

The prolonged survival of these signs suggests that they were intentionally engraved to convey a specific message to contemporary society. It served as a communicative tool. It could preferably be considered as an undeciphered script. Proper documentation and subsequent analysis are necessary to come to a definite conclusion. One attempt is to differentiate the signs observed in habitation and graves. In support of this, as stated above,

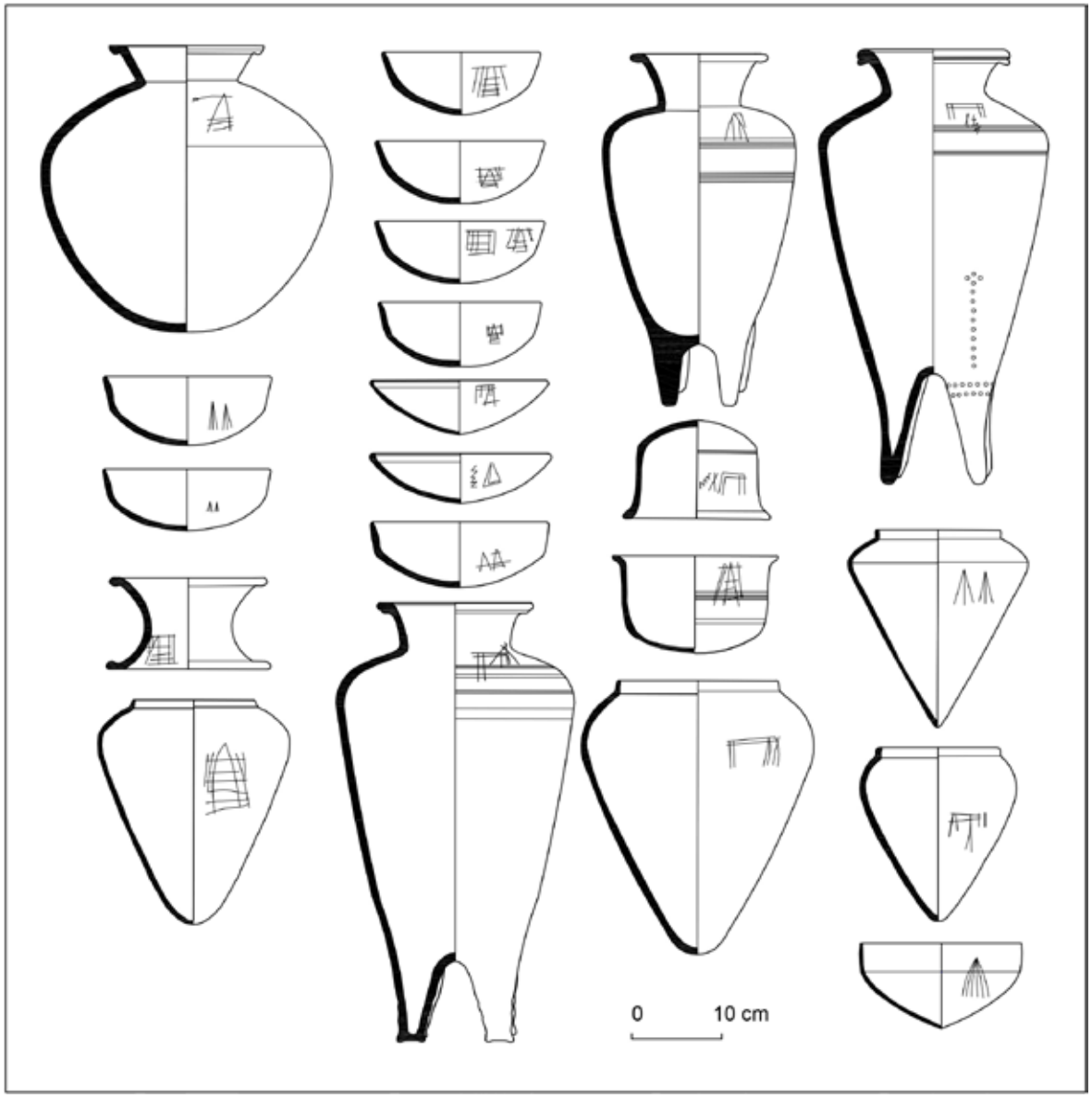

Fig. 4.20. Porunthal: Graffiti signs from grave MEG-IV

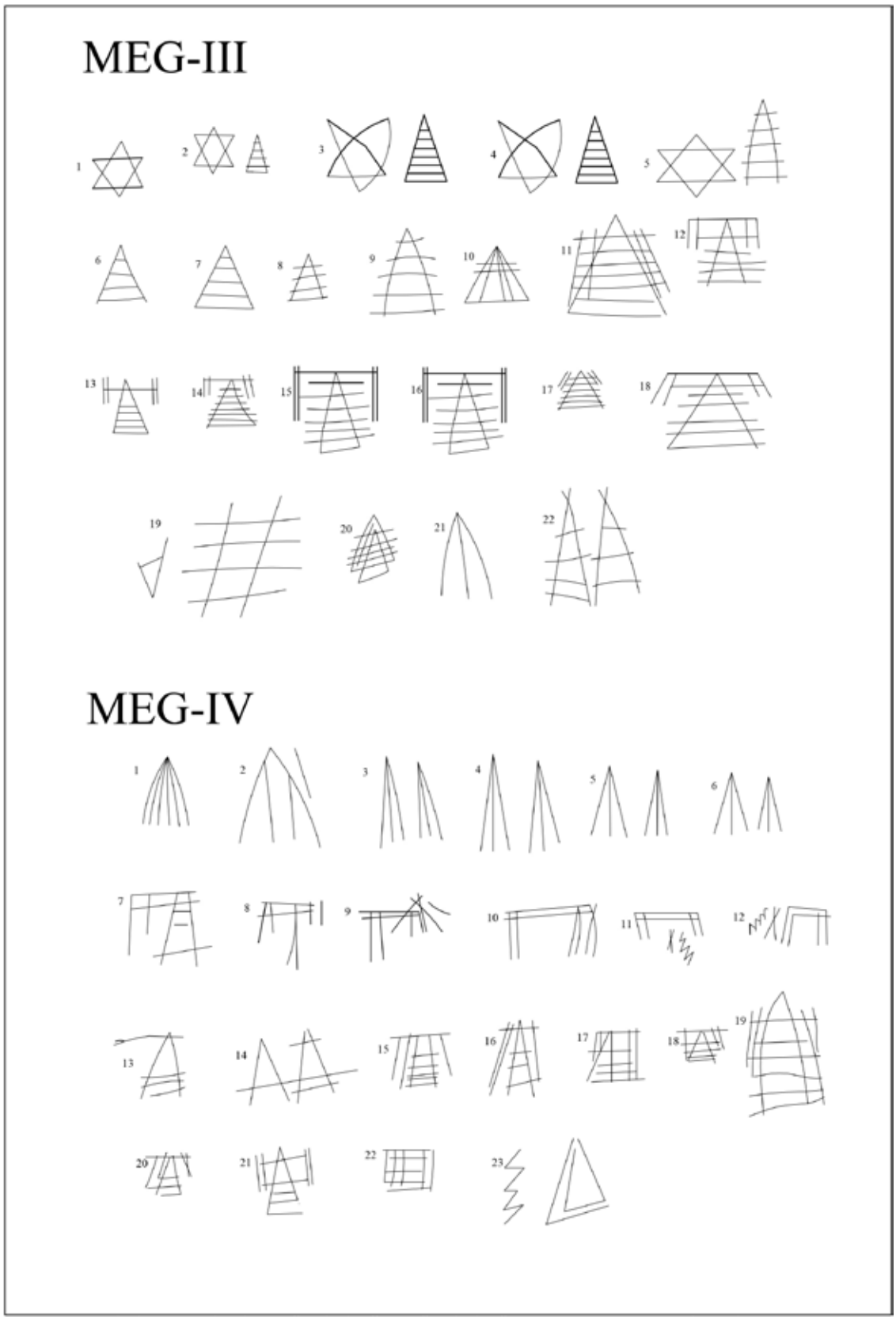

Fig. 4.21. Porunthal: Graffiti signs from grave MEG-III and MEG-IV

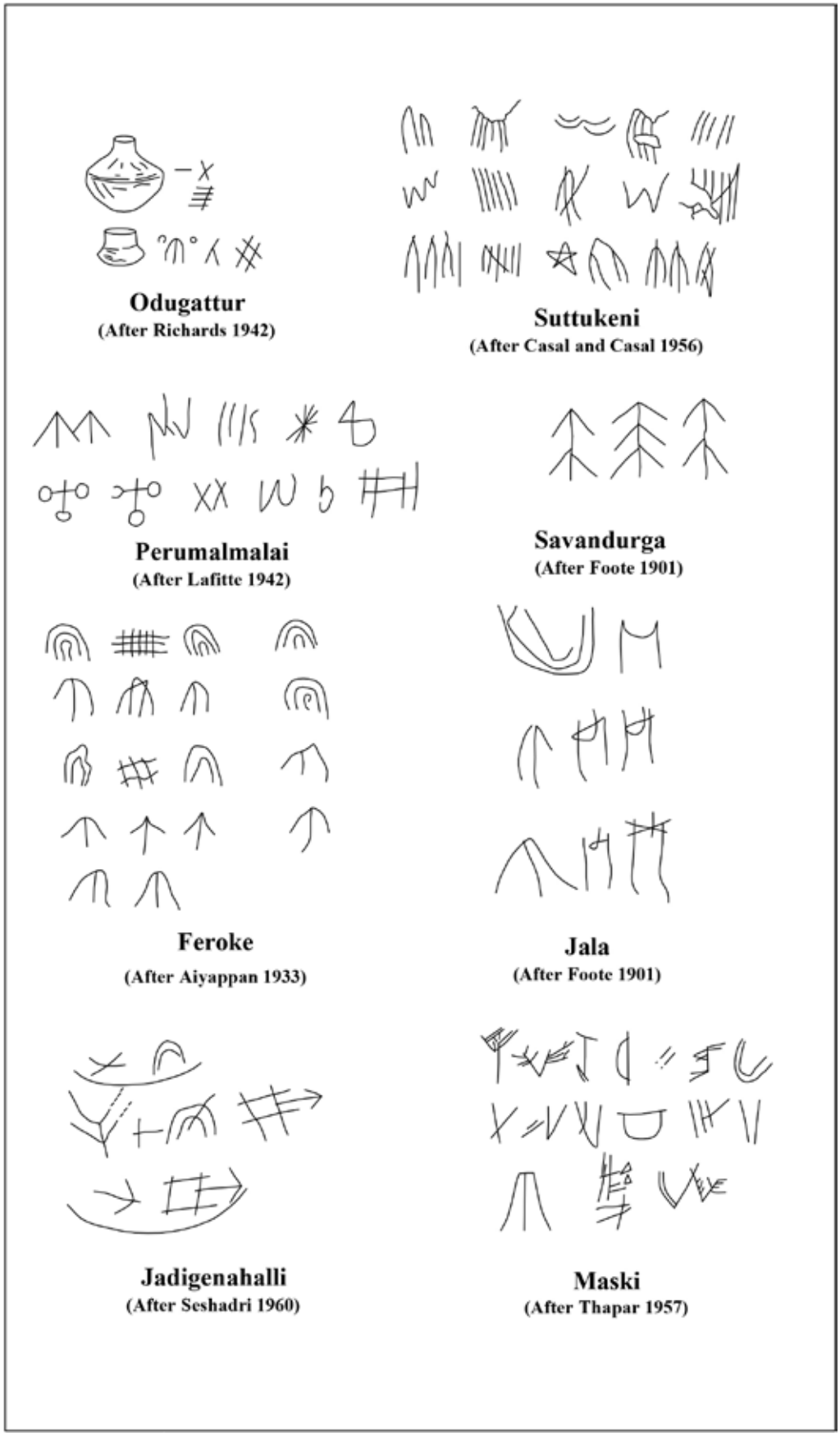

Fig. 4.22. Graffiti marks from various sites

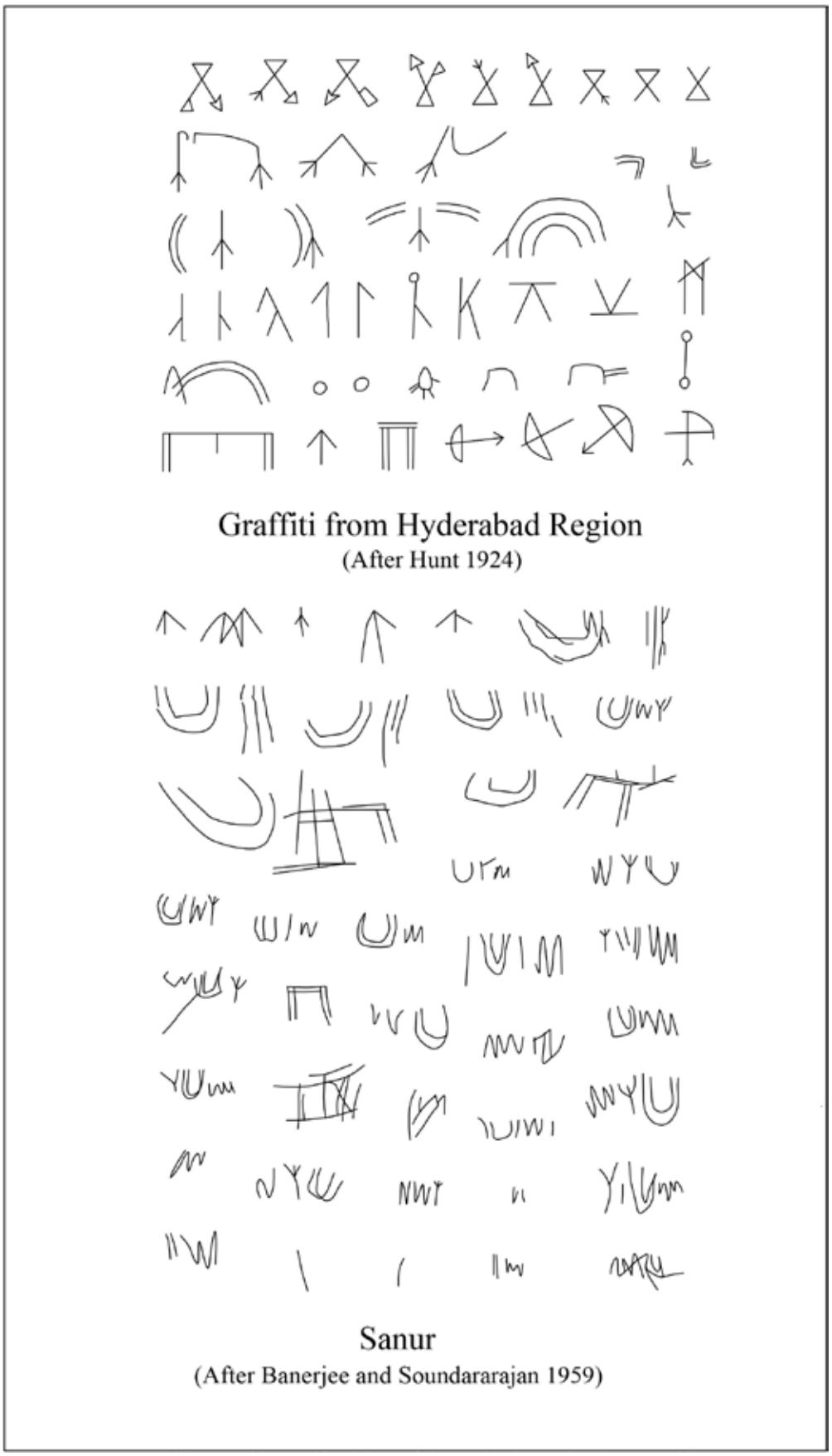

Fig. 4.23. Graffiti marks from Hyderabad and Sanur

Fig. 4.24. Graffiti marks from Khammam

each burial at Kodumanal and Porunthal had distinct signs engraved on most of the pots placed as grave goods. Of the fifteen burials excavated by Tamil University and Pondicherry University, only four (MEG-IV, VI, XI, and XVII) did not yield any graffiti on their pottery. The rest were associated with a specific sign engraved on all their pottery. It suggests that the particular sign is somewhat important and is closely related to the person in whose memory that grave was erected. Sure signs, like four vertical lines hanging from a horizontal line collected from different cemetery areas of Kodumanal, were of a clan or a social group. All the excavated graves at Kodumanal had six signs in total. The graves associated with a particular sign met with some identical ritual practices. For instance, the MEG-II, V, and XIV graves yielded many carnelian beads. In contrast, others had a negligible or limited number of carnelian beads but met with a substantial number of bronze/copper objects. Likewise, the transepted cist variety at Porunthal (MEG-I and II) with double line U-shaped signs is devoid of urns, whereas the double-cist variety with urns is placed in the chamber. Thus, the ritual performed in a particular variety of graves, which had a particular sign, maintained a kind of homogeneity both in content and quality. There is logic in accepting these signs as clan signs, as far as grave materials are concerned. Nevertheless, the same cannot be said for the signs found in habitation.

Such a situation is not witnessed in urn burials. Several urns were opened recently at Adichanallur, Sivagalai, and Keeladi-Kondagai, but none had graffiti signs on grave goods. However, the excavated trenches in the settlement yielded graffiti marks. The highest number of graffiti-inscribed potsherds (4797 sherds) came from Thulukkarpatti, located close to Adichanallur. Several early Iron Age graves were opened at Mayiladumparai, but none met with graffiti bearing pots. The non-occurrence of graffiti signs on grave goods may be due to their age or sepulchral practice. The habit of engraving graffiti marks on the grave goods might have come into practice later, probably in the early part of the 2nd millennium BCE, as observed at Kilnamandi, dated 1692 BCE. Kodumanal and Porunthal graves belong to the 6th BCE and later. Opening more types of graves associated with the settlement may give a good picture of these issues.

The availability of 42 base signs (base sign and its variants) and 2131 composite signs in the habitation restrains us from assigning them as clan signs. Every site has hundreds of base signs and their variants, and it is not easy to assume that there are several clan groups in a village. Therefore, graffiti signs encountered in graves may be considered clan signs, but the signs found in habitation cuttings have different meanings. Nearly 99% of the later-day Tamil̲i (Tamil̲-Brāhmī) inscribed potsherds carry personal names. In the same way, the graffiti signs may also carry the personal names of the individuals. Further, such signs are repeated at several places in different cultural contexts and on

different media. Therefore, one may presume that these signs are used to communicate between individuals as a writing system.

Habitation Context

Nearly two-thirds of the excavated sites in Tamil Nadu yielded graffiti signs. The excavators of the remaining one-third of the sites failed to record the graffiti in one way or another. Of the excavated sites, Thulukkarpatti, Kodumanal, Keeladi, Perumbalai, Adichanallur, Korkai, Alagankulam, Teriruveli. Karur, Mangudi, Sivagalai, Tirukampuliyur-Alagarai, Uraiyur, and Vallanadu-Agaram yielded numerous graffiti-bearing sherds. Outside Tamil Nadu, sites like T. Narashipur, Brahmagiri, Nagajunakonda, and Salihundam yielded numerous graffiti signs. Thus, most of the Iron Age and Early Historic sites of South India yielded graffiti. All the Early Historic sites yielding Tamiḻ-Brāhmī inscribed potsherds invariably met with graffiti, showing some cultural link between the two. The large number of graffiti collected from the habitation cuttings outnumbered those from the graves many times. This evidence further cleared the misconception about the funeral character of these signs and demonstrated their greater significance.

Identifying base signs and their variants helps us characterize the signs. Similarly, composite signs or ligatures help us understand their utility and nature. These post-firing graffiti are found engraved mostly on the shoulder portion of the tableware, as in the case of Tamiḻ-Brāhmī inscribed potsherds. Similarly, these signs are also noticed on all wares, but the bulk are observed on black-and-red ware, russet-coated ware, and red slipped ware. Interestingly, these were mostly restricted to tableware.

Ceramic Analysis

Most of the graffiti-inscribed sherds were found engraved on black-and-red ware, constituting nearly 62.69% (Table 4.3 and Chart 4.2). If one considers the russet-coated black-and-red ware constituting 0.91%, its occurrence increases to 63.60%. These graffiti marks are generally noticed on tableware. The russet-coated ware is found chiefly in the Kongu region, comprising the present-day Coimbatore, Tiruppur, Erode, and part of Salem, Namakkal, and Dharmapuri districts. Unlike black-and-red ware, russet-coated red and russet-coated black-red ware are restricted to a particular region. Therefore, their percentage (2.12%) naturally goes down. The everyday wares encountered throughout Tamil Nadu are the red ware (17.79%) and red slipped ware (12.58%). Most of the redware is used for cooking or storage vessels. Therefore, inscribing graffiti marks is restricted to 30.37 %; thus, the total

percentage falls below 50% of black-and-red ware. The rouletted ware is mainly restricted to coastal sites, and much of the data came from a single site, Alagankulam. The black ware and grey ware hardly get the attention of the engraver. Thus, the overall analysis of the ceramics indicates that the tableware made of black-and-red ware was preferred over other ceramics, thereby signifying the importance of the graffiti signs given by contemporary society.

Table 4.3. Number of graffiti-inscribed sherds noticed in various ceramics

S.No	Site	BRW	RW	RSW	BSW	BW	GW	RCRW	RCBRW	Rouletted	Total
1	Adichanallur	268	482	132	0	43	0	0	0	0	925
2	Alagankulam	159	32	64	7	11	23	0	0	68	364
3	Appukallu	4	0	0	0	0	0	0	0	0	4
4	Ariyanatham	13	1	1	0	0	0	0	0	0	15
5	Chettimedu	3	1	0	0	0	0	0	0	0	4
6	Enambakkam	0	1	0	0	0	0	0	0	0	1
7	Kanchipuram	8	4	2	0	0	0	1	0	0	15
8	Karur	99	46	66	0	5	0	1	0	2	219
9	Keeladi ASI	470	44	237	0	29	0	6	0	1	787
10	Keeladi-TNSDA	714	105	481	16	14	1	0	0	0	1331
11	Kilnamandi	59	4	27	10	1	0	0	0	0	101
12	Kodumanal-NSDA	993	195	53	0	24	0	71	19	0	1355
13	Kodumanal-TU-PU	441	48	24	8	9	0	7	110	0	647
14	Kongalnagaram	80	16	94	13	14	0	78	0	0	295
15	Korkai	236	182	0	0	2	0	0	0	0	420
16	Kothamangalam	20	4	4	0	2	0	0	0	0	30
17	Mallapadi	1	0	0	0	0	0	0	0	0	1
18	Mangudi	99	65	31	0	6	0	1	0	0	202
19	Mangulam	8	0	27	0	4	0	0	0	1	40
20	Mathagam	4	2	0	0	0	0	0	0	0	6
21	Melsittamur	1	0	0	0	1	0	0	0	0	2
22	Nedungur	28	5	32	0	5	1	5	0	0	76
23	Palur	1	0	0	0	0	0	0	0	0	1
24	Parikkal Natham	21	7	12	0	0	0	0	0	0	40
25	Pattaraiperumpudur	213	35	126	25	106	1	0	0	0	506
26	Perumbalai	683	0	238	106	0	0	0	0	0	1027
27	Pumpuhar	8	13	16	0	3	0	0	0	1	41
28	Salamedu	3	5	0	0	0	0	0	0	0	8
29	Senthamangalam	4	21	6	0	1	0	0	0	0	32
30	Sivagalai	74	74	0	0	0	0	0	0	0	148

S.No	Site	BRW	RW	RSW	BSW	BW	GW	RCRW	RCBRW	Rouletted	Total
31	Teriruveli	145	28	41	0	9	0	1	0	1	225
32	Thirukampuliyur	5	0	0	0	3	0	1	0	0	9
33	Thirukovilur	3	1	6	0	3	0	0	0	1	14
34	Thirunathamkonram	2	0	0	0	0	0	0	0	0	2
35	Thiruverkadu	0	1	0	0	0	0	0	0	0	1
36	Thulukarpatti	3752	1018	0	0	23	0	0	0	0	4793
37	Valasai	19	3	8	0	4	1	0	0	0	35
38	Vallanadu Agaram	241	77	54	0	73	0	0	0	0	445
39	Vidoor	0	1	0	0	0	0	0	0	0	1
Total		8882	2521	1782	185	395	27	172	129	75	14168

BRW: Black-and-red ware

RW: Red ware

RSW: Red slipped ware

BSW: Black slipped ware

BW: Black ware

GW: Grey ware

RCRW: Russet-coated red ware

RCBRW: Russet-coated black-and-red ware

Rouletted : Rouletted ware

Chart 4.2. Percentage of graffiti inscribed sherds found in Tamil Nadu

All the Tamiḻ-Brāhmī inscribed potsherds, except a few, generally carry personal names. The seals, rings, and coins also carry the personal names. Iravatham Mahadevan, in his recent study on Indus script, also identifies the short label inscriptions of Indus seals with proper names (Mahadevan 2014:1-44; 2015:1-24). Thus, the limited composite graffiti signs may also carry the personal names of the pot owner as of Tamiḻ-Brāhmī inscribed potsherds. However, further investigation and validation are required.

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S. Gurumurthy has documented 3056 graffiti from 108 sites. He listed nearly 513 signs as prominent graffiti and 768 as ligatured graffiti. He coined a new term for "group Graffiti" as "ligatured Graffiti" (Gurumurthy 1999:21-23). He also claimed that he had identified 84 graffiti, and the remaining 429 signs are yet to be identified out of 513 prominent graffiti (Gurumurthy 1999:76). He read all the above 84 signs by assuming they were written from right to left. He might have taken this stand to link these signs with the Indus script. Further, he ascertained that the ligatured ones could be read either from right to left or *vice versa* to get a sensible meaning (Gurumurthy 1999:76). According to him, some of these signs carry Indus scripts, some carry both Indus script and graffiti, some carry Brāhmī script and graffiti and all these signs are identified with the language Tamil. These conflicting observations make his decipherment untenable.

The Sanur graves met with three signs occurring many times together, but their placement order varies (Figs. 4.25-4.26). While documenting these signs, B.B. Lal was struck by the similarity with one of the Harappan signs (sign 47) (Lal 1960, Sign no.47, pl.3l B.l). This sign led him to believe that the Harappan signs and the Iron Age megalithic graffiti would have some cultural link, and the survival of the Indus script could be traced in South Indian Iron Age megalithic signs. Mahadevan continued the investigation on these interesting megalithic signs (Banerjee and Soundra Rajan 1959: Fig. 4: sign at left; Fig. 3: last two signs at right) and tracing their links with signs 47 and 48 ("seated anthropomorphs") of the Indus script (Mahadevan 1999:22-39). Taking a lead from Lal's observation, Mahadevan also emphasized that the Indus script and the megalithic signs are more likely to share the same semantic rather than phonetic values (Mahadevan 1995:1-31).

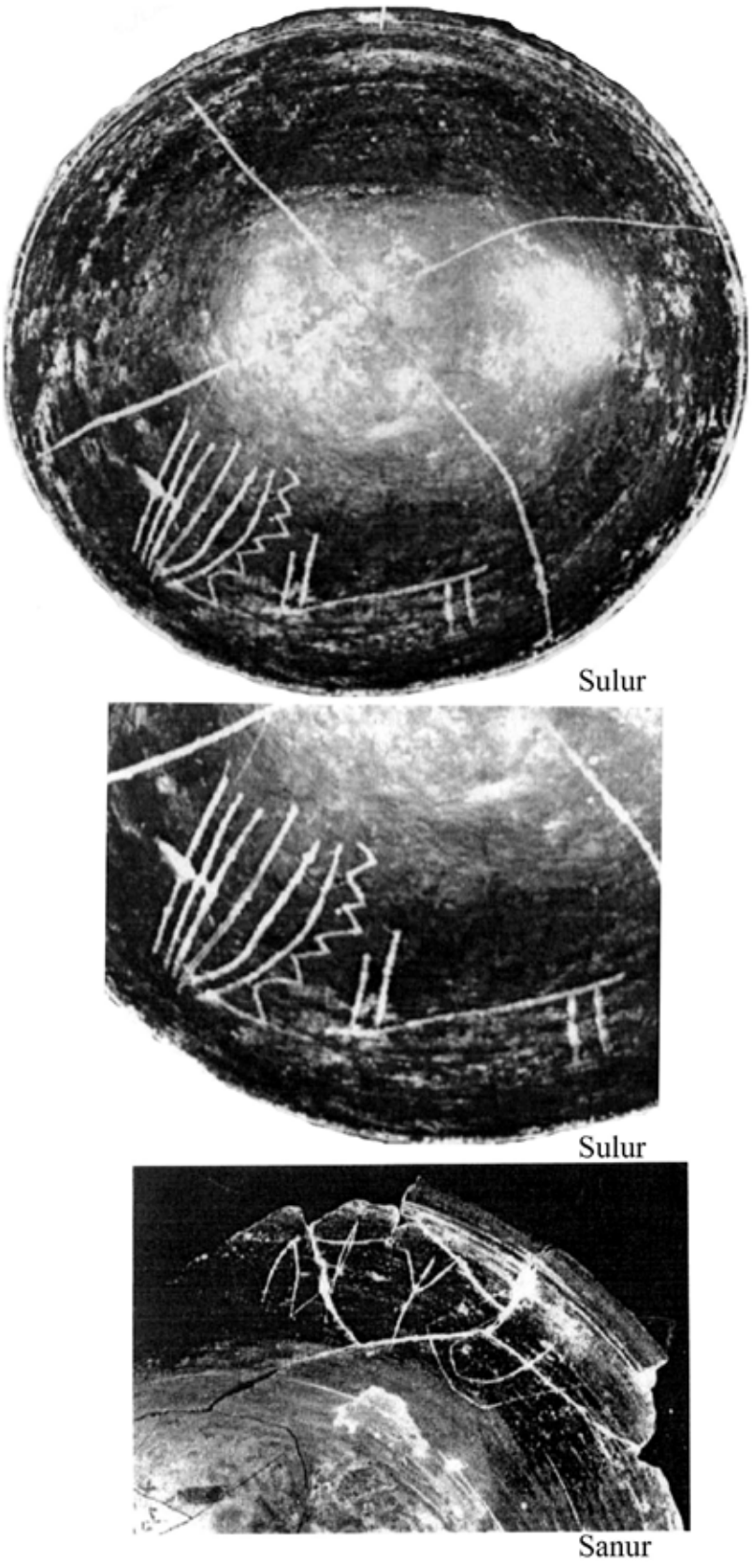


Fig. 4.25. Graffiti marks from Sulur and Sanur

Fig. 4.26. Graffiti marks from Sanur

Asko Parpola, who examined these signs, suggested that these were non-linguistic signs and do not represent real writing in the sense of speech-encoding (Parpola 2008:124). The Sulur grey ware plate engraved with a group of signs was identified by Iravatham Mahadevan as made of four signs (A, B, C, and D). He also found parallels in Indus signs, respectively, as sign nos. 89, 328, 176, and 342 (Mahadevan 2001:379-386). Mahadevan also identified two other signs engraved, probably on a dish recovered at Phu Khao Thong in Thailand, with Indus signs 47/48 and 261/373. He says they correspond with Indus texts 4589 and 5265 in the same sequence (Mahadevan 2015:1-24; *The Hindu,* April 8, 2010).

The comparative morphological study on graffiti and Indus script provided strong evidence of the close relationship between the two writing systems (see Chapter 7 for details). Of the 42 base signs identified in graffiti, nearly 23 are found in Indus text. About 48 variants of the base signs have also been found. Several signs are similar to Indus script and graffiti (see the sign table in Chapter 5 and the concordance in Chapter 7). Another interesting and important feature is that the position of the individual sign observed in composite signs was also reported in the Indus text.

Thus, the occurrence of more than 15000 graffiti-bearing potsherds and careful analysis by scholars points to a cultural link between the Indus script and South Indian Iron Age graffiti signs. The similarities experienced between the signs covering a wider geographical area in different cultural contexts indirectly emphasise that these signs are not mere signs but rather a kind of communication system/writing system followed over three millennia in India. Whether these graffiti signs evolved as Brāhmī around the 6th century BCE or the new script introduced in the 6th century BCE slowly replaced the existing system is yet to be ascertained in clear terms. However, one may accept at this stage of research that these signs were used as a kind of writing system in India. Irrespective of the substantial number of claims, the enigma of these signs continues. The lack of intensive excavation and proper documentation prevented us from arriving at a definite conclusion. The accumulation of data in the future may solve this vexing issue. Here, a modest attempt is made in site-specific,

region-specific, and sign-specific studies through intensive documentation to explain the significance of these graffiti signs. Future studies may strengthen the present proposition or give a fresh interpretation of these signs' socio-cultural-linguistic value. Thus, faithful documentation is an essential prerequisite for future studies.

Chapter-5

GRAFFITI - SIGN DESCRIPTION

GRAFFITI - SIGN DESCRIPTION

The sign list represents a normalised one. The most frequently occurring grapheme and the best available specimen are taken for normalisation. Nearly 2124 signs were identified out of 14168 graffiti-inscribed potsherds documented from 140 archaeological sites. Out of 2124 signs, 42 signs are recognized as base signs (Table 5.1). About 551 signs are considered variants of the base signs. At 1531 places, the base signs are associated with other signs as composites (Table 5.1). Some of the variants of the base signs are found only in composites but fail to occur independently. As stated in Chapter 3, any individual signs are considered base signs (Fig. 5.1). Similar to base signs, any additional strokes added to the base signs, but do not occur independently, are considered variants of base signs. A group of signs containing more than one base sign is considered composite (Fig. 5.2). Thus, the smallest grapheme is taken as the base sign. For instance, sign 1.0 is a base sign, whereas sign 1.23, which has an arrow mark attached to the top of the right oblique line of the base sign, is considered a variant of 1.0. These variants are numbered in sequential order. The occurrence of base signs or their variants is found in association with other base signs or their variants; then it is considered a composite form of the particular base sign. For instance, a *U-shaped* sign is considered a base sign (sign 15.0). A *ladder* is considered another base sign (sign 23.0). The combination of both (sign 23.26C) is considered the composite sign of both a *U-shaped* sign (sign 15.0) and a *ladder* (sign 23.0). However, several base signs had small additional strokes, making the base signs slightly different in their morphology. For instance, two oblique lines meeting at the top are considered a base sign (sign 2.0). Two pairs of the same sign are considered composite (sign 2.52C). In the same way, adding an arrow mark at the base of the extreme oblique line (sign 2.57C) is also considered as the composite of sign 2.0. The description of the base signs, variants, and their composites given below in the sign table could provide a modest understanding of the signs (Table 5.3). Though the descriptions are given based on our perception and understanding, interested scholars may improve further by analyzing the original pictures provided in the monograph.

Though we have encountered 42 base signs in the documentation, they were not frequently used. The signs 1.0 and 2.0 are the most commonly used, constituting 7.72% and 10.26% respectively. Nearly 10 base signs are used occasionally, with a percentage of less than 1%. Almost 54.31% represented by eleven signs (1.0, 2.0, 3.0, 11.0, 13.0, 15.0, 16.0, 30.0, 34.0, 36.0, and 37.0). Besides these 42 base signs, nine signs occur less than 10 times. Some signs occur mostly once (except fish symbols). These 124 signs are designated field symbols (43-166). However, several interesting features require our attention while observing these signs. The maximum number of variants one may observe

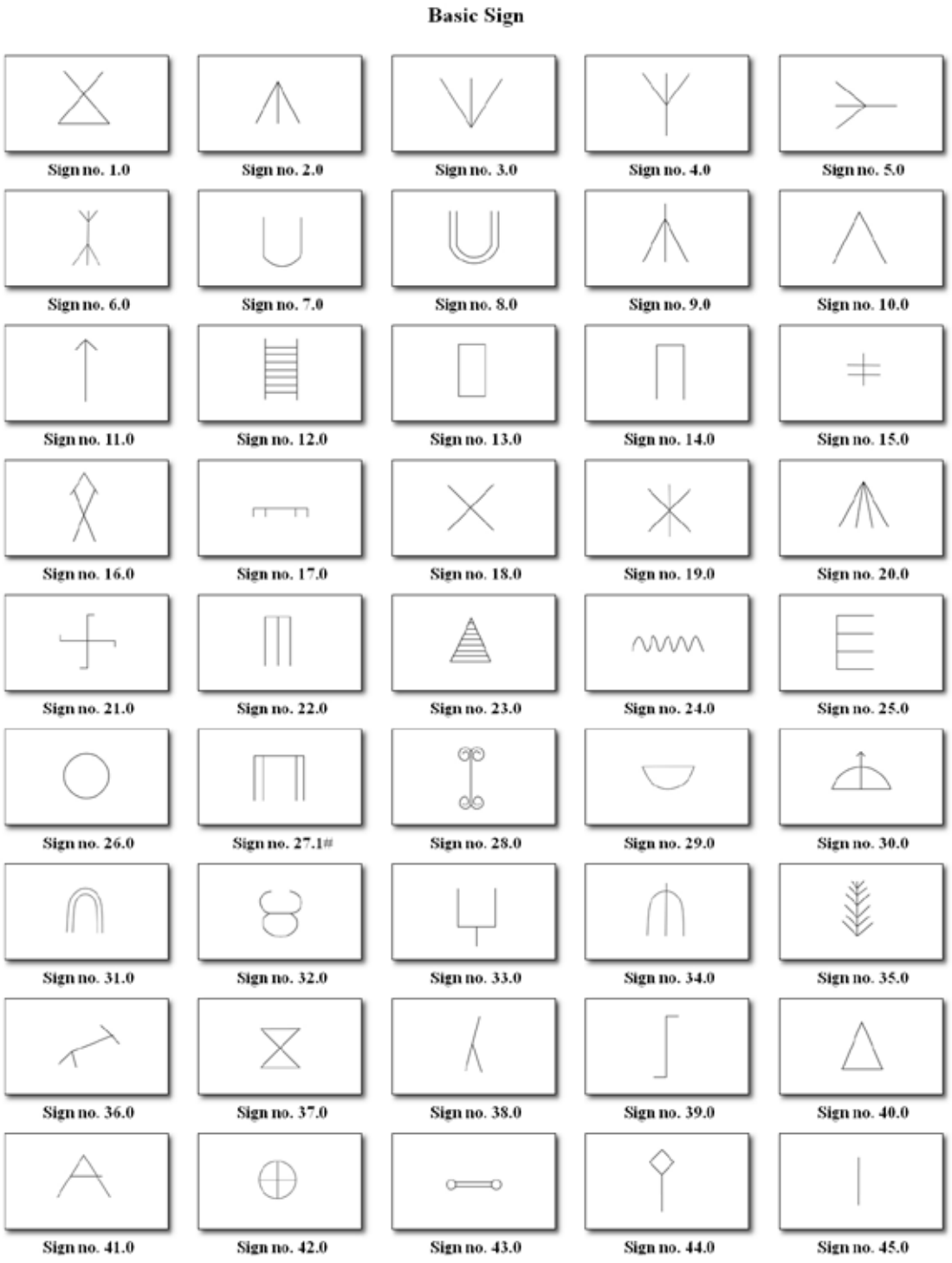


Fig. 5.1. Base signs

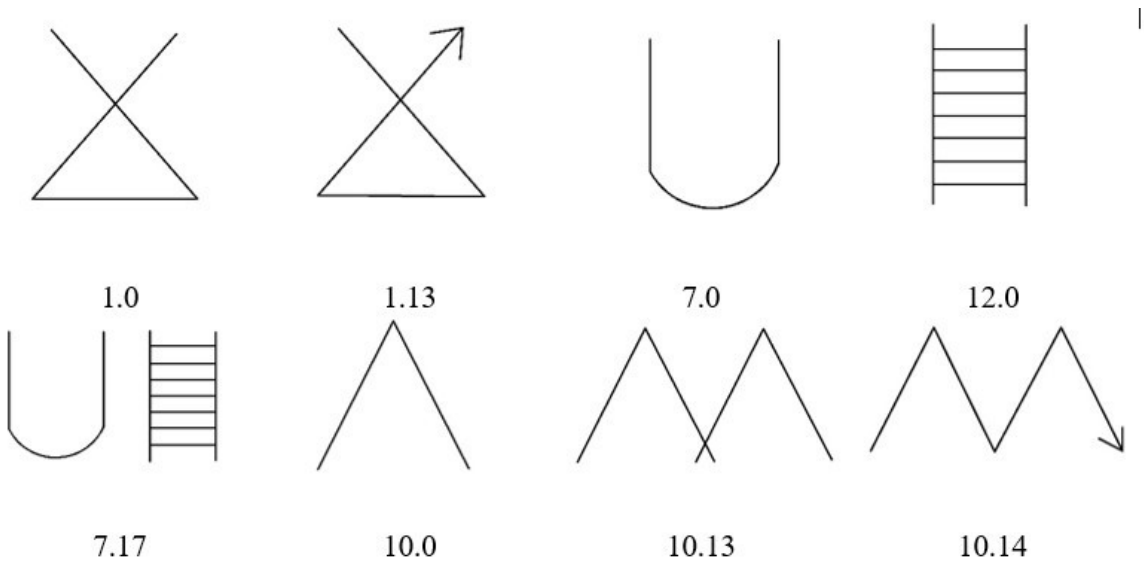


Fig.5.2. Base, variants and composites

in the sign table is the Asokan-Brāhmī "ma" like symbol (sign 1.0), two oblique lines meet at the top looking like an inverted letter-V (sign 2.0), and two oblique lines meet the central vertical line at the top (sign 3.0). As many as 39, 38, and 29 variants were observed. These signs added strokes on their left, right, centre, and bottom (signs 1.6, 1.7, 1.13, 1.14, 2.7, 2.8, 2.10, 3.1, 3.2, 3.3, 3.13, and 3.14). These signs are observed facing left, right, and upside down (signs 1.1, 1.2, 1.3, 2.1, 2.2, and 2.3). These signs are associated with other base signs as composite signs (sign 1.1C-1.124; 2.1C-179C; 3.1C-106C). The sign 9.0 is found in single, double, and triple (sign 9.0, 9.11C, 9.13C). The sign 9.0 had two oblique lines meeting at the centre of the mid-vertical line, which looks like an upward-facing three-pronged fork. This sign 9.0 is taken as a base, considering its combination and position. It is associated with various other base signs (sign 9.1C-9.43C). It is in pairs, triple, and on a rectangular platform (sign 9.11C, 9.13C, 9.16C). The sign 9.0 is one of the critical signs, as it is generally associated with a ruling class. The Edakkal cave inscription related to the Chera clan name (*kaṭumi puta cēra*) has this sign at the end of the inscription. The seal recovered in a burial context at Anaikottai in Sri Lanka also had this sign (see Chapter 4, Figs. 4.8-4.10). The ladder (sign 23.0) is another sign frequently encountered in archaeological contexts. It is also found in rock paintings. Ajit Kumar, who examined this sign in rock art, felt that the ladder motif is essentially associated with death. This sign represents a symbolic prop for the soul to gain ascendancy to heaven (Ajit Kumar 2013:681-688). Sign 22.0 is a rectangular box divided vertically into two or sometimes four square parts (sign 22.2). The sign 22.2 is a combination of three base signs. These signs were reported in the Tamiḻi cave inscription at Kongarpuliyamkulam (see Chapter 4 Fig. 4.11).

Fig. 5.3. Sangam Age coins having fish and bow symbols

The fish signs (sign 14.0) are in different forms (sign 14.1-14.15). This is one of the standard symbols of Harappan times, and was also adopted as an *insignia* of the Pandya dynasty. The Sangam Age Pandya and Chera coins are engraved with their emblem, a fish and a bow, respectively. The Punch Marked Coins issued by Pandya kings had fish signs (Fig. 5.3). The interesting feature of the fish sign is that it is represented individually without a combination of other signs and artistically as a field sign in most cases (sign 44.0-50.0 and 92.0-100). The X-mark (sign 30.0) is primarily associated with a vertical line placed on its left, right, top, bottom, and on either side (sign 30.1C-30.12C).

The two (sign 2.0), three (sign 3.0), four (sign 5.0), five (sign 5.7), six (sign 5.11), seven (sign 5.13), or eight (sign 5.14) oblique lines meeting at the top can also be compared with the sign 2.0. The evidence suggests that these signs must be taken as individual base signs. The *swastika*-like sign is found in clockwise (sign 33.0) and anti-clockwise (sign 33.1) directions. It is also met with double arms (sign 33.8-33.11). It is also found in combination with other signs (sign 33.2C-33.15C). Three, four, five, or seven vertical lines hanging from a horizontal line is another common sign (sign 24.0-24.7). This sign is also observed in the burial context at Kodumanal (sign 24.1). Whenever one gets such signs in a grave, the grave is generally met with copper objects devoid of carnelian beads. Likewise, the grave met with sign 3.0 and its variants always met with many carnelian beads.

Another vital sign is the triangular-shaped sign filled with horizontal strokes (sign 7.0). This sign is surmounted by a horizontal line with two small vertical strokes hanging at either end (sign 7.10C). This sign is also found at the end of the Tamiḻ-Brāhmī inscribed potsherds (See Tamiḻi catalogue, KDL-TU-PU-D-230). At Porunthal, both the signs (sign 7.0 and 25.0) were observed from a single grave, thereby indicating two different signs. The wavy line is placed horizontally (sign 34.0), vertically (sign 34.1), or in a slanting manner (sign 34.2), mostly in association with other base signs as ligature (sign 2.0 and 3.0). The most significant number of occurrences of sign 24.0 is found in association with signs 3.0 and 39.0 (Chart 5.1).

The bow and arrow sign, an *insignia* of the Chera dynasty, is depicted facing all directions (sign 18.0-18.10). The Chera coins also carry this sign. The terracotta disc or hopscotch recovered recently at Kongalnagaram in Coimbatore district had an upward-facing bow and arrow sign with an elephant goad at the base. The taurine sign is found individually (sign 40.0) or in composite form (sign 40.3C). It is also repeatedly found in Punch Marked coins, popularly known as the *nandi-pada* symbol.

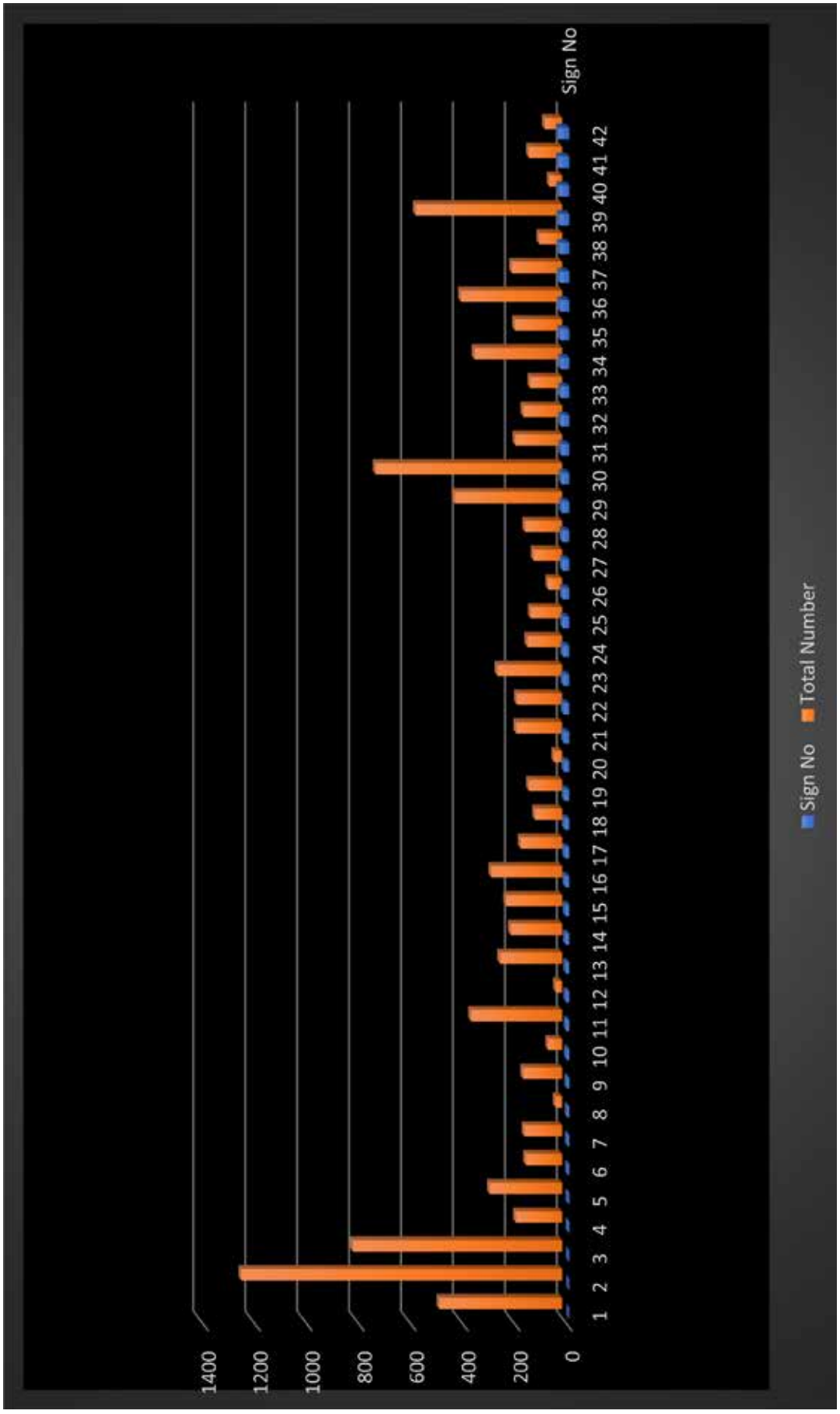


Chart 5.1. The sign numbers and their number of occurrences (inclusive of base signs, variants, and composites)

As stated above, several field signs were identified, such as fish, crab, plough, anthropomorphic, boat, abstract of animals and birds, spiral, star, jar-like symbol, flower, and other abstract symbols (sign 43.0-166).

The excavation conducted in the Hyderabad region (Hunt 1924; Yazdani 1917) and Khammam in Andhra Pradesh, Jadigenahalli (Seshadri 1960), Jala (Foote 1901) and Maski (Thapar 1957) in Karnataka; Feroke (Aiyappan 1933) in Kerala; Suttukeni (Casal and Casal 1956) in Pondicherry; Odugattur (Richards 1924), Perumalmalai (Lafitte 1931), Sanur (Banerjee and Soundara Rajan 1959), Porunthal (Rajan and Yathees Kumar 2014) and several other places yielded graffiti marks. Besides, graffiti inscribed potsherds were recovered from the surface at several areas, such as Parikkal, Parikkal Nattam, Kongalnagaram, Tiruvarur, Pudukkottai, Tamaraikulam, Kottamangalam, Salaimedu, Tirunarungkondrai, Turavi, and many other places in Tamil Nadu (Table 5.1).

The recurrence of several signs at several sites in different cultural zones covering a wider geographical area suggests that these graffiti are not mere marks but reflections of one kind of writing system (Chart 5.2). The present attempt is just the beginning of the long journey, and still, we need more data for the overall interpretation of these marks. The faithful documentation and limited contextual and morphological analysis are encouraging and indirectly emphasize these marks' significance. Though the exact meaning of these signs could not be ascertained or determined based on the available evidence, the nature, position, frequency, morphology, and cultural context forced us to pay serious attention to these signs. The future interpretation or decipherment may help us understand the origin of language, script, faith, belief, customs, and many other aspects of society. Given its significance, the complete catalogue of 14168 specimens consisting of 42 base signs and 2124 composite signs recovered from 140 archaeological sites of Tamil Nadu is placed before the scholars for rigorous academic scrutiny (Table 5.2).

Table 5.1. Number of occurrences of base signs, variants, and composites

S. No.	Base sign	Total no. of variants	Total no. of composites	Total	Percentage
1	1.0	39	124	164	7.72
2	2.0	38	179	218	10.26
3	3.0	29	106	136	6.40
4	4.0	3	19	23	1.08
5	5.0	16	35	52	2.45
6	6.0	9	40	50	2.35
7	7.0	4	32	37	1.74
8	8.0	5	8	14	0.66
9	9.0	6	43	50	2.35
10	10.0	4	5	10	0.47
11	11.0	12	59	72	3.39
12	12.0	3	3	7	0.33
13	13.0	35	66	102	4.80
14	14.0	15	16	32	1.51
15	15.0	9	83	93	4.38
16	16.0	8	59	68	3.20
17	17.0	16	41	58	2.73
18	18.0	10	5	16	0.75
19	19.0	6	28	35	1.65
20	20.0	6	0	7	0.33
21	21.0	11	38	50	2.35
22	22.0	16	35	52	2.45
23	23.0	4	40	45	2.12
24	24.0	10	20	31	1.46
25	25.0	8	21	30	1.41
26	26.0	5	10	16	0.75
27	27.0	6	2	9	0.42
28	28.0	12	26	39	1.84
29	29.0	24	22	47	2.21
30	30.0	20	70	91	4.28
31	31.0	14	16	31	1.46
32	32.0	10	20	31	1.46

S. No.	Base sign	Total no. of variants	Total no. of composites	Total	Percentage
33	33.0	17	16	34	1.60
34	34.0	6	60	67	3.15
35	35.0	18	18	37	1.74
36	36.0	23	51	75	3.53
37	37.0	27	40	68	3.20
38	38.0	15	22	38	1.79
39	39.0	18	22	41	1.93
40	40.0	2	3	6	0.28
41	41.0	7	20	28	1.32
42	42.0	5	8	14	0.66
	Total	**551**	**1531**	**2124**	**99.96**

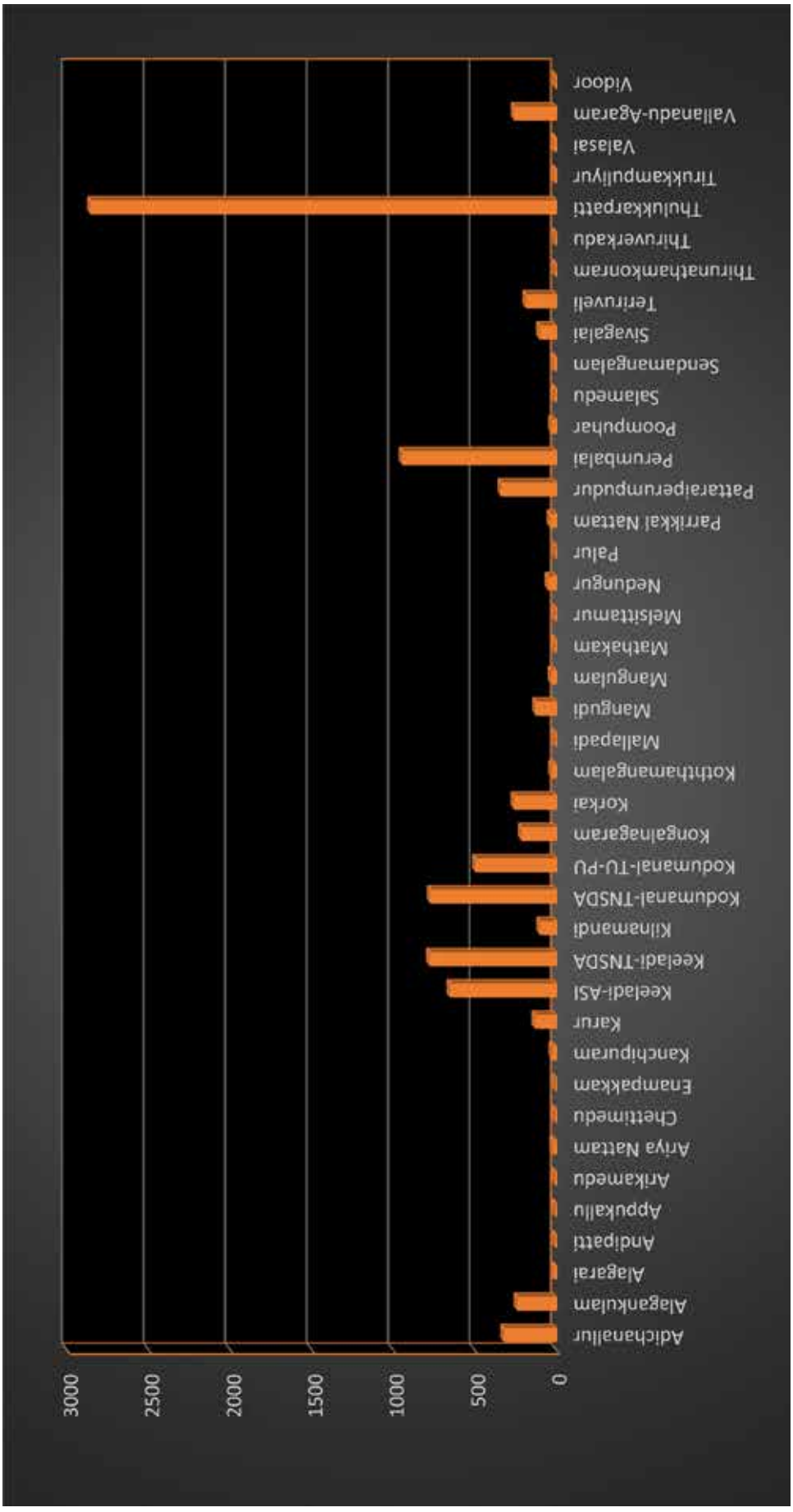


Chart 5.2. The site yielding several signs
(inclusive of base signs, variants, and composites)

Table 5.2: Sign Description

Sign No.	Description
Sign No. 1 Base Sign and its variants.	
1.0	A cross or X-shaped line with a horizontal line placed at the bottom. It looks like an Asokan-Brahmi '*ma*'.
1.1	Similar to sign 1.0 placed upside down
1.2	Similar to sign 1.0 oriented towards the left
1.3	Similar to sign 1.0, placed oriented towards the right
1.4	Similar to sign 1.0 with a minor additional oblique stroke placed interior on the top-right oblique line
1.5	Similar to sign 1.0 with a small additional oblique stroke placed interior on the top-left oblique line.
1.6	Similar to sign 1.0 with a small additional oblique stroke placed exterior on the top-right oblique line facing downward
1.7	Similar to sign 1.0 with a small additional oblique stroke placed exterior on the top-left oblique line facing horizontally
1.8	Upside down Sign 1.0 with an oblique stroke attached to its right
1.9	Similar to sign 1.0 with a small horizontal stroke placed at the bottom of the sign to its right
1.1	Similar to sign 1.0 with a small horizontal stroke placed at the bottom of the sign to its left
1.11	Sign 1.0 attached with an oblique stroke attached to the left bottom
1.12	Similar to sign 1.1 with an oblique stroke attached to top left
1.13	Similar to sign 1.0 with a small vertical stroke extending downwards from the centre of the sign
1.14	Similar to sign 1.0 with a small vertical stroke extending upwards from the centre of the sign
1.15	Sign 1.0 with an oblique stroke attached at the bottom right
1.16	Similar to sign 1.0 with a horizontal stroke attached to its left on the mid.
1.17	Similar to sign 1.0 with a small horizontal stroke placed exterior at the middle of the sign to its left
1.18	Similar to sign 1.0 with a small horizontal stroke placed on the exterior at the top edge of the right oblique line
1.19	Similar to sign 1.3 with an oblique line extending down from the top right
1.2	Similar to sign 1.0 with a small oblique stroke placed on the exterior top of left oblique line facing downward
1.21	Similar to sign 1.0 with a small oblique stroke placed on the exterior top of right oblique line facing downward
1.22	Similar to sign 1.0 with a small oblique stroke placed on the exterior top of both right and left oblique lines facing downward

Sign No.	Description
1.23	Similar to sign 1.0 with a right oblique line branched off looking like a downward arrow
1.24	Similar to sign 1.0 with a left oblique line branched off looking like a downward arrow
1.25	Similar to sign 1.6 but with two oblique strokes placed exterior on the top-right oblique line facing downward
1.26	Similar to sign 1.25 having two oblique strokes on both arms
1.27	Sign 1.3 with a vertical attached to the top arm both above and below
1.28	Sign 1.0 attached with two oblique strokes placed at both ends and one more oblique stroke placed top left
1.29	Sign 1.0 having oblique strokes attached on both the arms and a plus mark in the middle
1.3	Similar to sign 1.0 with a curved body
1.31	Similar to sign 1.31 with a curved body placed upside down
1.32	Similar to sign 1.30 having a small additional oblique stroke placed exterior on the top of the right oblique line
1.33	Sign 1.30 attached with an oblique stroke at the base left
1.34	Sign 1.30 with an oblique stroke attached to the left arm top
1.35	Similar to base sign 1.30 with an additional horizontal stroke attached to the right arm and oblique stroke at the middle
1.36	Sign 1.30 with a sign 2.0 attached at the left top arm and an oblique stroke to the right arm top
1.37	Similar to sign 1.30 with a curved bottom and a small oblique stroke placed on the top of both right and left oblique lines facing downward
1.38	Similar to sign 1.31 with a curved bottom and a small oblique stroke placed on the top of both right and left oblique lines facing upward
1.39	Similar to sign 1.37 with an additional vertical stroke added at the centre.
Sign No. 1 Base sign in composites	
1.1C	Base sign 1.0 having an additional vertical stroke (sign 39.0) to its left
1.2C	Base sign 1.0 having an additional vertical stroke (sign 39.0) to its right
1.3C	Sign 1.0 with an oblique stroke placed on its left arm top
1.4C	Base sign 1.0 having two additional vertical strokes to its left (sign 39.2)
1.5C	Base sign 1.0 having two additional vertical strokes to its right (sign 39.2)
1.6C	Base sign 1.0 having additional vertical strokes on either side (sign 39.0)
1.7C	Similar to sign 1.0 having two vertical strokes (sign 39.0) hanging on either side from the edge of the oblique lines
1.8C	Similar to sign 1.28 having an additional small step at the bottom of sign 39.0
1.9C	Sign 1.0 with sign 21.0 attached with sign 2.2 to its top right placed right
1.10C	Sign 1.0 placed over the sign 17.1 and an oblique line runs over them

Sign No.	Description
1.11C	Base sign 1.0 shown in a pair with an additional vertical line (sign 39.0) hanging from the top of the extreme oblique lines on either side
1.12C	A pair of signs 1.0 and sign 1.0 with sign 21.2 attached on the left arm and sign 1.14 placed above
1.13C	Similar to sign 1.0 having one horizontal stroke attached to the right hand and another vertical stroke (sign 39.0) to its left
1.14C	Similar to sign 1.22 having additional oblique lines attached on either side. In addition, a small oblique stroke is placed between the extreme right oblique lines
1.15C	Sign 1.21 having a small oblique stroke added facing downward at the top edge of the right oblique line. In addition, a vertical line (sign 39.0) with a greater than symbol added at the bottom (sign 2.2)
1.16C	Similar to sign 1.0 having a small horizontal stroke added to its left arm with another horizontal stroke (Sign 39.0) at the middle and sign 21.0 to its bottom
1.17C	Base sign 1.0 with V-shaped sign (sign 2.1) to its right
1.18C	Sign 1.0 attached with sign 2.0 above it. A horizontal stroke intersected by two vertical strokes
1.19C	Sign 1.0 superimposed with sign 2.0
1.20C	Base sign 1.0 sign 3.0 added to its left
1.21C	Base sign 1.0 with a downward facing three-pronged fork-like sign (sign 11.0) placed in a slanting position to its left
1.22C	Base sign 1.0 with a small horizontal three-pronged fork-like sign (sign 10.1) to its right
1.23C	Base sign 1.0 with an upward three-pronged fork-like sign (sign 9.0) added to its left
1.24C	Base sign 1.0 with an upward-facing arrow mark having two oblique lines added at the shoulder ends (sign 13.6)
1.25C	Base sign 1.0 with an X-shaped sign (sign 30.0) placed to its left
1.26C	Base sign 1.0 with an X- shaped sign (sign 30.0) to its right but smaller in size
1.27C	Sign 1.0 superimposed with sign 30.0
1.28C	Sign 1.0 attached with an oblique stroke on its left arm and sign 30.0 placed below
1.29C	Base sign 1.0 with a star-like sign (sign 31.7) added to its right
1.30C	Base sign 1.0 shown in a pair
1.31C	Base sign 1.0 shown in a pair with overlap
1.32C	A pair made of sign 1.0 and 1.3 aligned
1.33C	Base sign 1.0 placed upside down (sign 1.1). Inverted Y-shaped sign placed second (36.0). Base sign 1.0 with horizontal stroke attached to its left at the cross placed third (sign 1.16) and the inverted Y-shaped sign placed extreme right as a fourth sign (sign 36.1)
1.34C	Sign 1.0 is attached with a Y-shaped sign 36.3 to its right

Sign No.	Description
1.35C	Base sign 1.0 placed inside a U-shaped sign (sign 15.0)
1.36C	Base sign 1.0 placed inside a U-shaped sign (sign 15.0)
1.37C	Similar to sign 1.0 having a small vertical stroke added at the cross (sign 1.14) which placed inside a U-shaped sign (sign 15.0).
1.38C	Similar to sign 1.0 placed inside two U-shaped concentric lines (sign 16.0)
1.39C	Sign 1.6 with a double lined up-facing semi-circle with another small semi-circle at its bottom.
1.40C	Sign 1.5 with an oblique stroke attached on the left arm top and box sign 21.1 to its right
1.41C	Sign 1.0 placed with a triangle sign 6.0
1.42C	Sign 39.0, 1.0 and 6.0 placed in order
1.43C	Sign 1.0 superimposed by sign 25.0
1.44C	Base sign 1.0 placed inside a square box (sign 22.7)
1.45C	Base sign 1.0 with a circle added to its left (sign 19.0). Two small oblique strokes added on the top of the circle
1.46C	Sign 1.0 and sign 35.9 inverted
1.47C	Sign 39.0 with sign 1.0 having an oblique stroke attached to the left arm top
1.48C	Sign 1.0 attached with sign 18.0 on its left arm top and an oblique stroke on its right arm top
1.49C	Pair of sign 1.22
1.50C	Sign 1.22 having a horizontal line at the top
1.51C	Sign 1.22 attached with horizontal strokes respectively on either side and two parallel vertical lines (sign 39.2) placed to its right
1.52C	Sign 1.0 with a horizontal stroke attached at the top left and bisected two small vertical strokes
1.53C	Base sign 1.0 placed inside a U-shaped sign (sign 15.0) and a vertical line placed to its left (sign 39.0)
1.54C	Base sign 1.0 placed inside a U-shaped sign (sign 15.0) and A-like sign in the middle (sign 41.0) and a vertical line placed to its extreme left (sign 39.0)
1.55C	Sign 1.4 with a vertical line (sign 39.0) placed to its left
1.56C	Base sign 1.0 placed with another sign placed to its left having two oblique lines meeting at the top (sign 2.0)
1.57C	Base sign 1.0 with another base sign 2.0
1.58C	Base sign 1.0 with another sign 11.0 to its left
1.59C	Base sign 1.0 placed as a pair inside a U-shaped sign (sign 15.0)
1.60C	Base sign 1.0 turned upside down placed inside an inverted U-shaped sign 15.1
1.61C	Base sign 1.0 placed with a horizontal line at the centre (sign 39.1)
1.62C	Similar to sign 1.0 having a curved bottom with a wavy line placed horizontally to its left (sign 34.0)

Sign No.	Description
1.63C	Similar to sign 1.0 with a curved bottom and a semi-circular line facing down placed to its left (sign 17.0)
1.64C	Similar to sign 1.0 with the sign 4.0 attached to its right hand.
1.65C	Similar to sign 1.0 with a G-like sign to its right
1.66C	Sign 1.0 with the split top having a circle 19.0 bisected
1.67C	Similar to sign 1.0 with a curved bottom having a small circle (sign 19.0) added inside the loop on the left oblique line. An arrow-like stroke added above the circle on the oblique line
1.68C	Similar to sign 1.30 with a curved bottom having an additional vertical stroke (sign 39.0) to its left
1.69C	Sign1.30 with a vertical line attached on its left
1.70C	Similar to sign 1.30 with a curved bottom having an additional vertical stroke (sign 39.0) to its right
1.71C	Similar to sign 1.30 bisected by a vertical line
1.72C	Sign 1.30 superimposed with a horizontal line sign 39.1
1.73C	Similar to 1.1 with additional strokes on one of its arms and its base with sign 2.0 to its right
1.74C	A vertical line placed with a base sign 1.0 having a rectangular box sign 21.1
1.75C	Sign 2.1 with sign 1.30 having a small horizontal stroke placed at the bottom right
1.76C	Similar to sign 1.30 with a curved body with an inverted Y-like sign to its right (36.1)
1.77C	Similar to sign 1.30 with a curved bottom with a down-facing trident symbol to its right (sign 11.0)
1.78C	Sign 1.30 with a curved bottom placed inside two U-shaped symbols (sign 16.0)
1.79C	Similar to sign 1.30 with the sign 24.2 in between its arms
1.80C	Similar to sign 1.30 with a curved bottom and having a small circle (sign 19.0) attached at the bottom to its left
1.81C	A pair of Base signs 1.30 and 1.31
1.82C	Similar to sign 1.30 with a curved bottom and having a ‘V’ like symbol (sign 2.1) placed at the middle.
1.83C	Sign 1.22 having sign 36.6 attached on the left side
1.84C	Sign 1.30 with sign 2.0 surmounted on a semi-circle (sign 17.1)
1.85C	Three sign 1.0 superimposed
1.86C	Sign 1.1 attached with greater than sign 2.2to its right
1.87C	Sign 39.2, sign 1.1 and a plus-mark sign 29.0 placed attached at the bottom of the sign 1.1
1.88C	Sign 1.1 inside a triangle (sign 6.0) and both signs placed inside a circle (sign 19.0)
1.89C	Two signs 1.1 and to the right sign 32.1 attached with sign 2.2 on its right

Sign No.	Description
1.90C	A shield-like sign with a plus-mark surmounted and sign 1.1 placed to its right
1.91C	Sign 1.1 with a horizontal line interior and an oblique stroke at the base
1.92C	Similar to sign 1.0 with a curved body turned upside down placed inside an upside down U-shaped sign (15.1)
1.93C	Sign 1.31 with sign 39.0
1.94C	Sign 1.31 with sign 39.2 to its right
1.95C	Inverted sign 1.31 with a horizontal line in the middle and above
1.96C	Sign 1.31 superimposed with two horizontal lines 39.3 and a vertical line
1.97C	Sign 1.31 divided with sign 39.0 and to the right semicircle attached at the base left and a pair of V-shaped signs placed one above the other on a line
1.98C	Sign 1.31 and 2.0 within it
1.99C	Sign 1.31 with curved body turned upside down placed inside an upside-down U-shaped sign (15.1)
1.100C	Similar to sign 1.2 but with a curved bottom and flower-like arrow attached to the bottom left and a vertical line to its middle in top
1.101C	Sign 1.31 with a flower-like arrow attached to the bottom left and sign 39.2 placed to the right
1.102C	Sign 1.31 with sign 2.0 to its right
1.103C	Sign 1.30 and sign 2.0
1.104C	Sign 1.30 with sign 36.0
1.105C	Sign 1.31 with sign 19.0 and a horizontal stroke to its right
1.106C	1.31 sign with an inverted V-shaped stroke attached to its stem
1.107C	A kolam (rangoli) like a sign made with A pair of signs 1.31
1.108C	Sign 1.31 with sign 17.4C to the right
1.109C	Sign 1.3 with a curved base and horizontal line 39.1 above
1.110C	Sign 1.3 with a curved base superimposed with sign 2.3#
1.111C	Similar to sign 1.2 bisected by a horizontal but the upper oblique line is small
1.112C	Sign 1.2 with a horizontal line 39.1 on its top
1.113C	Sign 1.2 with two horizontal lines 39.1 to its top and bottom
1.114C	Sign 37.10 and sign 1.2 with an oblique stroke on its left top
1.115C	Sign 1.3 and 39.0
1.116C	Sign 1.3 with sign 39.0 placed in the middle making it as a ligature
1.117C	Sign 1.3 having the vertical line 39.0 shifted towards left
1.118C	Sign 1.2 attached to a parallel vertical line (sign 39.2) to its left
1.119C	Sign 1.3 with sign 2.1
1.120C	Sign 1.3 attached with sign 29.0 to its bottom-left

Sign No.	Description
1.121C	Sign 1.116C placed inside sign 15.0
1.122C	Base sign 1.2 placed inside a circle 19.0
1.123C	Sign 1.37, 15.1, 5.13, 2.0 placed respectively
1.124C	Sign 1.0, 15.0, 2.0 with an oblique stroke, a vertical line attached with an L-shaped sign to its left and two curved lines one at the top and another at the bottom and A pair of signs 21.0
Sign No. 2 Base Sign and its variants	
2.0	Two oblique lines meet at the top
2.1	Base sign 2.0 placed upside down
2.2	Base sign 2.0 placed facing right
2.3	Base sign 2.0 placed facing left
2.4	Sign 2.0 attached with an oblique stroke attached in the middle of the left oblique line
2.5	Sign 2.0 attached with an oblique stroke attached right middle
2.6	Base sign 2.0 having an additional oblique stroke attached to the right oblique line at the middle
2.7	Base sign 2.0 placed with a small oblique stroke to its left at the top
2.8	Sign 2.0 with a horizontal stroke attached top right
2.9	Sign 2.0 having an oblique stroke attached to the interior of the left oblique line
2.1	Sign 2.0 with an oblique stroke placed on the interior of the right oblique line
2.11	Sign 2.0 with an oblique stroke attached at the left base
2.12	Sign 2.0 attached with an oblique line to its right at the base
2.13	Sign 2.0 with an oblique stroke attached at the base of the right oblique line on its interior
2.14	Similar to sign 2.0 with two oblique strokes attached on either side at the interior
2.15	Base sign 2.0 with two vertical strokes from its interior on the right
2.16	Sign 2.0 with an oblique stroke placed on the interior of the right oblique line and an oblique line attached at the base to its right
2.17	Base sign 2.0 with an upward stroke extending from its left edge and a horizontal line extending towards its left from its top
2.18	Base sign 2.0 having an additional oblique stroke attached to the left oblique line at the middle and a small oblique to the right oblique line at the middle
2.19	Base sign 2.0 with an arrow added at the base of the right oblique line and another oblique stroke at the base of the left oblique line
2.2	Sign 2.0 attached with a semicircle on the top left
2.21	Sign 2.0 surmounted with a split or V-shaped sign
2.22	Sign 2.0 attached with a sign 2.1 to its right top

Sign No.	Description
2.23	Sign 2.0 attached with a parallel L-shaped sign in the middle of the left oblique line
2.24	Sign 2.0 with an oblique stroke placed in the middle of the right oblique line
2.25	Sign 2.1 with oblique stroke placed on the right top
2.26	Sign 2.1 with an oblique line attached to its top-right
2.27	Sign 2.1 having an oblique stroke attached to the left top
2.28	Sign 2.1 attached with an angled extension to the top-right exterior
2.29	Sign 2.1 attached with an angled extension to the top-left interior
2.3	Sign 2.1 with an oblique line attached on either side
2.31	Sign 2.1 attached with an oblique stroke on the interior top of both arms.
2.32	Sign 2.1 attached with small identical sign on either side in the middle
2.33	Sign 2.1 attached with an oblique stroke top left and two horizontal strokes top right
2.34	Base sign 2.0 having an additional oblique stroke attached to the right oblique line at the base and another oblique line attached in the middle of the left oblique line
2.35	Sign 2.2 with a branched-off top oblique line
2.36	Sign 2.0 attached which is branched-off at the bottom of the right oblique line and two oblique strokes on the interior at the bottom of the left oblique line
2.37	Base sign 2.0 with single, triple, and hook-like strokes
2.38	Sign 2.0 which is branched-off at the base of the left oblique line and an oblique stroke at the base of the right oblique line
Sign No. 2 Base sign in composites	
2.1C	Base sign 2.0 with an additional vertical line on its left (sign 39.0)
2.2C	Base sign 2.0 with two vertical lines placed to its left (sign 39.2)
2.3C	Sign 2.0 with a vertical line superimposed (sign 39.0)
2.4C	Sign 2.0 placed with two vertical lines (sign 39.2) to its left
2.5C	Sign 2.0 superimposed with sign 39.2
2.6C	Base sign 2.0 with an additional vertical line to its right (sign 39.0)
2.7C	Base sign 2.0 with two vertical lines placed to its right (sign 39.2)
2.8C	Base sign 2.0 with two vertical lines (sign 39.0) placed on either side
2.9C	Base sign 2.0 with a small horizontal stroke on its right (sign 39.1)
2.10C	Base sign 2.0 surmounted with a horizontal line (sign 39.2)
2.11C	Sign 2.0 placed with a horizontal line
2.12C	Sign 2.0 with an oblique stroke cutting across at the middle of the right oblique line
2.13C	A pair of signs 2.0 surmounted with a horizontal line
2.14C	Base sign 2.0 with two horizontal lines (Sign 39.3) above it

Sign No.	Description
2.15C	Sign 2.0 placed with two parallel horizontal lines (Sign 39.3)
2.16C	Sign 2.0 placed with two parallel horizontal lines (Sign 39.3) with an oblique placed over the horizontal line
2.17C	Sign 2.3, 34.5, 39.0 and 35.5
2.18C	Sign 2.0 superimposed with an inverted L-shaped sign
2.19C	Sign 2.0 superimposed with sign 21.0
2.20C	Base sign 2.0 with a horizontal stroke to its left and hook-like sign 37.0 intersecting it in the middle
2.21C	Base sign 2.0 on its right exterior attached with sign 37.16 facing up
2.22C	Base sign 2.0 with an additional vertical line on its left (sign 39.0) and a wavy line running over it (sign 34.1)
2.23C	Base sign 2.0 in a pair with a vertical line to its left (sign 39.0)
2.24C	Sign 2.12 attached with an oblique line on the right in the interior and to the right sign 2.0 is placed
2.25C	A pair of signs 2.0 with an oblique line connecting both
2.26C	Sign 39.0, 2.0 and 34.5
2.27C	A wavy line (sign 34.0) added at the top left of sign 2.0 and sign 3.0 placed to its right
2.28C	Sign 2.0 with a pair of oblique lines attached at the base of the right oblique line
2.29C	Sign 2.0 with a small 2.0 and 39.2 attached to its left oblique line
2.30C	Sign 10.54C attached with a sign 30.0 having an oblique stroke attached at the middle of the right oblique line
2.31C	Sign 2.54C with sign 1.2 placed inside with an oblique line
2.32C	Sign 39.0 in the middle of sign 2.0 with a loop at the bottom of the right oblique line
2.33C	Sign 2.0 with two oblique strokes attached to its right and a vertical line (sign 39.0) placed next to it
2.34C	Base sign 2.0 with X-mark sign (sign 30.0) and two parallel vertical lines to its right (sign 39.2)
2.35C	Base sign 2.0 with an oblique line extending upwards from the left edge and two vertical lines 39.2 to its right and both strike through with a horizontal line 39.1
2.36C	Sign 39.0, 2.0 and 3.47C placed in order
2.37C	Base sign 2.0 with its right edge branched-off, to the right of it another base sign 2.0 and to the left of both there is a vertical line 39.0
2.38C	Base sign 2.0 in a pair with a horizontal line (sign 39.1) placed at the top
2.39C	Sign 2.12 and to the right of it there is a vertical line branched-off which is attached to the horizontal line above
2.40C	Base sign 2.0 surmounted on a horizontal line which stands on two vertical lines of which the right one is attached with a triangle at its bottom

Sign No.	Description
2.41C	Base sign 2.0 with X sign to its right, further right of it a vertical line and a horizontal line striking through all the three sign
2.42C	Sign 2.0 with an oblique stroke on the right oblique line and two parallel vertical lines placed to its right and both connected by a horizontal line
2.43C	Base sign 2.0 with three other signs. The second sign (sign 30.0) is an X-mark, the third is a vertical line (sign 39.0) and the fourth is an Asokan-Brahmi ‘ma’ like sign (sign 1.0)
2.44C	Base sign 2.0 with a wavy line (sign 34.1) placed over the right oblique line
2.45C	Sign 25.0 placed with a sign 2.1 superimposing it
2.46C	Sign 2.54C with a spiral at its right exterior oblique lines
2.47C	Sign 2.0 and sign 2.1
2.48C	Sign 2.0 with sign 2.1 placed at the top interior
2.49C	Base sign 2.0 in a pair
2.50C	A pair of signs 2.0 adjoined
2.51C	Base sign 2.0 in a pair joined with horizontal strokes executed in ladder fashion of sign 23.0
2.52C	Base sign 2.0 in a pair intersecting
2.53C	A pair of signs 2.0 but superimposed on the right oblique line
2.54C	Base sign 2.0 in a pair placed within other
2.55C	Base sign 2.0 with another base sign 2.0 small in size placed inside near to the right oblique line
2.56C	Base sign 2.0 in a pair with an arrow mark added at the base of the extreme oblique line and both are separate.
2.57C	Base sign 2.0 in a pair and the extreme right oblique line having an arrow mark at the base and both are adjoined
2.58C	Sign 2.0 with sign 36.17 placed inside
2.59C	Sign 3.0 placed inside the sign 2.0
2.60C	Base sign 2.0 with an X-shaped sign (sign 30.0) to its right
2.61C	Base sign 2.0 superimposed with inverted sign 2.1.
2.62C	Base sign 2.0 with an abstract sign to its left
2.63C	Three base sign 2.0 adjoined
2.64C	A pair of signs 2.0 intersecting with another sign 2.0 and another small 2.0 sign above them
2.65C	Base sign 2.0 with Fish sign 14.1 on its right
2.66C	Sign 2.0 superimposed with sign 30.0 and sign 2.2
2.67C	A pair of signs 2.0 with sign 30.0 placed below
2.68C	Sign 2.54C with two parallel lines to its right (sign 39.2)
2.69C	Sign 2.54C attached with sign 28.3 to its left

Sign No.	Description
2.70C	Sign 2.0 and 7.0 connected by a horizontal line at the top
2.71C	Base sign 2.0 placed thrice and sign 37.14 placed over the right lines
2.72C	Sign 2.54C filled with two 24.1 signs
2.73C	Sign 2.72C with an oblique line on the right
2.74C	A pair of signs 2.0 with an oblique stroke attached at the base and another two unidentified sign
2.75C	Sign 36.1 placed inside a base sign 2.0
2.76C	Sign 2.0 with sign 2.9 placed to the left
2.77C	A half circle surmounted by a conical shape. Sign 2.0 surmounted on sign 17.1
2.78C	Base sign 2.0 with another sign (sign 3.0)
2.79C	Base sign 2.0 covering another sign in the middle (sign 3.0)
2.80C	Sign 2.54C divided by a horizontal line 39.1 with a pair of parallel vertical lines 39.2 at both ends
2.81C	Base sign 2.0 with a horizontal line strike to its right and the sign 3.0 intersects on its right
2.82C	Sign 2.0 with sign 3.0 having an oblique stroke attached at the bottom
2.83C	Sign 2.0 and sign 34.1 attached to 3.0
2.84C	Sign 2.0 attached with an oblique stroke attached at the base and sign 1.116 placed to its right
2.85C	Base sign 2.0 attached to 3.0 I right and sign 1.3 facing right placed over sign 3.0
2.86C	Sign 2.0 super imposed on a right-facing sign 5.9
2.87C	Base sign 2.0 with another sign to the right (sign 3.25)
2.88C	Base sign 2.0,21.0, 11.0 and 19.0 placed in a horizontal order
2.89C	Base sign 2.0 with sign 9.0 to its right attached to an abstract lines
2.90C	Base sign 2.0 having a small oblique stroke attached at the top and another sign (sign 11.0) placed to its right
2.91C	Base sign 2.0 with an X-marker placed to its right (sign 30.0)
2.92C	Sign 2.0 with sign 30.0 superimposed
2.93C	Sign 2.0 with an inverted L-shaped sign placed above sign 30.0
2.94C	Base sign 2.0 with sign 31.1 to the right
2.95C	V-shaped sign (sign 2.1) covered with a semicircle 17.0
2.96C	A pair of signs 2.0 with an arrow attached at the bottom of the extreme left oblique line
2.97C	Sign 2.0 attached with two parallel horizontal lines 39.3 at the top; a single horizontal line 39.1 in the middle and two parallel horizontal lines 39.3 on either side at the base. The right horizontal lines are cut across by two vertical lines 39.2
2.98C	Sign 2.0 cut with 39.0 and sign 22.1 to the right

Sign No.	Description
2.99C	Base sign 2.0 attached with sign 28.2 in between which sign 17.0 is attached
2.100C	Sign 2.0 and sign 13.0
2.101C	Base sign 2.0 with sign 13.16 and a vertical line 39.0 attached to its left
2.102C	Two base signs 2.0 adjoined and an arrow 13.9 attached to the centre of both.
2.103C	A sign 37.2 placed between A pair of signs 2.0
2.104C	Three base signs 2.0 of which the middle one is attached with an oblique line 39.1 to its right which cuts through another post like sign 37.10
2.105C	Sign 2.0 placed above the upward-facing semicircle 17.1
2.106C	Base sign 2.0 within it another sign 17.0
2.107C	A left-facing water drop-like sign 2.77C with a circular carved 26.0 at the centre
2.108C	Sign 2.0 having two parallel right-facing sign 17.8 attached to the interior
2.109C	Sign 2.106C with a ladder (sign 23.0) to its right
2.110C	Sign 2.0 and to the right sign 40.2 without the middle stroke placed on a H-like sign 39.18
2.111C	Base sign 2.0 with a triangle surmounted on the top (sign 6.1)
2.112C	Base sign 2.0 with a square box to its left (sign 22.7)
2.113C	Landscape rectangle 22.0 surmounted on sign 2.0
2.114C	Base sign 2.0 with half vertical Semi-circle 17.6 to its right
2.115C	Sign 2.0 surmounted with sign 19.0
2.116C	Sign 2.0 attached with sign 3.24 on right with an additional oblique line cutting it
2.117C	Sign 2.0 with a horizontal stroke attached at the bottom left with a sign 1.0 superimposed on the right oblique line
2.118C	Sign 2.0 attached with two oblique strokes at the base and another one having an inverted V-shaped sign with two oblique strokes attached at the top right
2.119C	Sign 2.12 with sign 11.0 placed to its right
2.120C	Sign 2.11 superimposed with sign 39.3s
2.121C	Base sign 2.0 super imposed with sign 29.4
2.122C	Sign 2.11 with two additional strokes on its left
2.123C	Sign 2.0 with oblique stroke attached to its right oblique line and sign 2.2 attached to the left oblique line
2.124C	Sign 2.10 with sign 11.0 on the right
2.125C	Sign 2.0 having oblique strokes attached to the interior on both an oblique line and a vertical line 39.0 placed to its right
2.126C	Sign 2.9 with the sign 36.0 to its right
2.127C	Sign 2.9 with sign 37.9 attached to its left oblique line in the interior
2.128C	Sign 2.9 with sign 37.10 attached to its right oblique line in the interior

Sign No.	Description
2.129C	A double-line diamond-shaped sign with open open-ended top and a vertical line with a diamond-shaped top sign 38.2 placed at the centre
2.130C	A pair of signs 2.12, sign 9.0, sign 36.0 with an oblique line attached at the base and sign 15.0 placed in an order
2.131C	Sign 2.0 having two vertical strokes placed on either side with sign 9.0 attached to it
2.132C	A horizontal line running over sign 2.0, 1.3 and 39.2
2.133C	Base sign 2.0 attached with two 2.2 on its end and to the right of it single vertical line 39.0
2.134C	Sign 2.1 with a vertical line to its right (sign 39.0)
2.135C	Sign 39.2 with sign 2.1 placed to its right
2.136C	Sign 2.1 with two vertical lines (sign 39.2) to its right
2.137C	Sign 2.1 covered with a horizontal line 39.1
2.138C	Sign 2.1 placed between two horizontal lines 39.1s
2.139C	Sign 2.1 super imposed with two horizontal lines sign 39.1 at the top & bottom each and the right of it sign 3.25
2.140C	Base sign 2.1 and 4.0
2.141C	An inverted V-symbol (sign 2.1) with sign 27.2
2.142C	A pair of 2.1
2.143C	A two-parallel V-shaped sign 2.1
2.144C	A three-parallel V-shaped sign 2.1
2.145C	Upside down of sign 2.48C
2.146C	Sign 2.1 superimposed with upside-down sign 2.30
2.147C	Sign 2.143C with a horizontal stroke attached to its right on the exterior
2.148C	Sign 2.143C with a greater than symbol below (sign 2.2)
2.149C	Sign 2.143C with two strokes between them and a vertical line 39.0 attached to the right
2.150C	Sign 2.143C and to the right sign 11.0
2.151C	Pair of sign 2.1 and sign 39.0 to the right
2.152C	A pair of signs 2.1 with sign 37.13 to its right
2.153C	Sign 39.2, 2.1 and 15.0
2.154C	Sign 2.1 and a U-shaped sign 15.0 having an oblique stroke attached on its right
2.155C	Sign 2.1 with a jar-like sign15.5 placed next to it
2.156C	Sign 2.1 with sign 39.0 and 9.0 to its right
2.157C	Base sign 2.1 with a vertical line (sign 39.0) and sign 5.0
2.158C	A vertical line (sign 39.0) placed with a parallel V-shaped sign 2.143C
2.159C	Sign 2.1 mound on the edge of a horizontal line 39.1 below it there is sign no. 4.0

Sign No.	Description
2.160C	Sign 2.1, sign 38.0, greater than sign 2.3 and a vertical line 39.0 placed in a order
2.161C	Sign 2.1 placed between two vertical lines 39.0 and sign 34.5 placed to its right
2.162C	Sign 2.1 with sign 30.0 next to it
2.163C	Similar to sign 2.145C but with strokes extending out and horizontal stroke inside
2.164C	Sign 2.1 with an oblique stroke attached on its right and a vertical line (sign 39.0) placed to its right
2.165C	Sign 2.25 w and a circular dot 19.0 placed next to it and sign 21.0 placed to its right
2.166C	Sign 39.2 with sign 2.1 having an inverted L-shaped attached to its left oblique line at the middle of the interior
2.167C	Sign 2.2 superimposed on sign 39.2 and sign 39.0 placed left
2.168C	A pair of signs 2.2 -laced parallel
2.169C	Base sign 2.1, stylish fish (sign 14.2) and sign 1.30
2.170C	Sign 2.2, sign 39.0 and sign 11.0 with oblique strokes attached on either side of the central vertical line
2.171C	Sign 2.2 superimposed with tilted sign 37.14 and an oblique line 39.1 above
2.172C	Four vertical lines 39.6 intersected by left- facing sign 2.30
2.173C	Sign 2.3 with two parallel vertical lines (sign 39.2)
2.174C	Two vertical lines 39.2 superimposed with sign 2.3
2.175C	A pair of signs 2.3 placed one below the other and attached to a vertical line 39.0 to its right
2.176C	Sign 2.2 and 2.3 attached to a vertical line in superimposing manner
2.177C	Sign 2.3 with sign 36.5 attached inside
2.178C	Sign 2.3 superimposed with vertical 39.0 and horizontal line 39.1
2.179C	Two sign 2.0 attached at their ends and a horizontal line attached to the exterior left
Sign No. 3 Base sign and its variants	
3.0	Two oblique lines meet at the top of a central vertical line that somewhat looks like a three-pronged fork
3.1	Base sign 3.0 with a small additional oblique stroke added at the base of the right oblique line
3.2	Similar to sign 3.0 with a small additional oblique stroke added on the right at the base of the right oblique line
3.3	Sign 3.0 attached with an oblique line at the base of the left oblique line
3.4	Sign 3.0 with an oblique stroke attached at the top left
3.5	Sign 3.0 with an oblique stroke placed on its left oblique line
3.6	Sign 3.0 with an oblique stroke placed on its right oblique line

Sign No.	Description
3.7	Base sign 3.0 with a small additional oblique stroke added on the interior at the base of the left oblique line
3.8	Base sign 3.0 having oblique strokes attached at the base of the left oblique and central vertical lines
3.9	Similar to sign 3.0 but with a hook-like curve at the bottom of the left oblique line
3.1	Base sign 3.0 with a small additional oblique stroke added on the left at the base of the central vertical line
3.11	Base sign 3.0 with a small additional oblique stroke added on the right at the base of the central vertical line
3.12	The base sign 3.0 having an oblique line placed over its right oblique line at the middle
3.13	Base sign 3.0 with a horizontal stroke added to its right on the top
3.14	Base sign 3.0 with a horizontal stroke added to its left on the top
3.15	Sign 3.0 having an inverted L-shaped sign attached to its left
3.16	Base sign 3.0 with a v-shaped stroke added at the middle of the central vertical line to its right
3.17	Base sign 3.0 with a v-shaped stroke added in the middle between the central vertical line and right oblique line
3.18	Base sign 3.0 with a triangle added at the middle of the central vertical line to its right
3.19	Sign 3.0 with a V-shaped stroke added in the middle of the central vertical line on its left
3.2	Base sign 3.0 with two downward-looking semi-circular lines placed at the top
3.21	Base sign 3.0 with two more small oblique lines attached on the middle part of the left extreme oblique line
3.22	Base sign 3.0 with two parallel oblique lines placed across the central vertical line
3.23	Base sign 3.0 with a branched-off left oblique line
3.24	Sign 3.0 with an oblique stroke attached to the left of the central vertical line
3.25	Base sign 3.0 attached with another two oblique lines at the middle of the vertical line
3.26	Base sign 3.0 attached with another pair of oblique lines attached at the middle of the vertical line to its left
3.27	Base sign 3.0 attached with another a pair of oblique lines attached on either side at the middle of the vertical line
3.28	Sign 3.0 with an oblique stroke attached to the right of the central vertical line
Sign No. 3 Base Sign in composites	
3.1C	The Base sign 3.0 with a vertical line (sign 39.0) placed to its left
3.2C	Base sign 3.0 with an additional vertical line (sign 39.0) placed to its right
3.3C	Base sign 3.0 with two vertical lines (sign 39.2) added to its right
3.4C	Base sign 3.0 with a horizontal line (sign 39.1) placed at the top

Sign No.	Description
3.5C	Base sign 3.0 placed with a horizontal line 39.1 at the top
3.6C	Sign 3.0 placed on a horizontal line 39.1
3.7C	Sign 3.0 with a horizontal line 39.1 at the base with extending middle line
3.8C	Sign 3.0 with an arrow attached at the bottom of the central vertical line and an oblique stroke placed on the right oblique line and sign 1.3 attached on the left oblique line
3.9C	Base sign 3.0 attached to its left top with an Ashokan-Brahmi ‘ma’ like sign with an additional oblique line added between the central vertical line and extreme right oblique line
3.10C	Base sign 3.0 with an oblique line 39.0 cutting through its middle and right oblique lines
3.11C	Base sign 3.0 intersected with two parallel lines 39.3
3.12C	Sign 3.27 with four vertical lines to its right
3.13C	Base sign 3.0 intersected by curved lines
3.14C	Base sign 3.0 placed to the left of sign 34.0 and 34.0 and all three are topped with a horizontal line
3.15C	Sign 3.0 with an oblique stroke at the bottom and a horizontal line 39.1 superimposed on it
3.16C	A pair of signs 3.0 with an oblique stroke attached on the top left of the second sign
3.17C	A pair of Base signs 3.0 with a horizontal line (sign 39.1) placed at the bottom
3.18C	A pair of signs 3.0 connected by parallel horizontal lines 39.3
3.19C	A pair of Base signs 3.0 connected by a horizontal line (sign 39.1)
3.20C	Base sign 3.0 superimposed with sign 5.7 on the right and both are topped with a horizontal line
3.21C	Sign 3.0 attached with a horizontal line at the top and at the bottom of the right oblique line
3.22C	Base sign 3.0 having a horizontal line 39.1 placed on the top and two vertical lines (sign 39.2) placed to its right
3.23C	Sign 39.0, sign 3.0 with two parallel oblique lines 39.2 placed on the right oblique line and two parallel vertical lines 39.2 placed to its right
3.24C	Sign 39.0, 39.4, 3.0 and 9.0 placed in order and a horizontal line 39.1 cut across sign 45.2 and 3.0
3.25C	Sign 3.0 filled with zig-zag lines 34.1 and a vertical lines 39.0 stroke attached on either side at the bottom
3.26C	Sign 3.0 filled with four horizontal strokes and an oblique stroke attached at the bottom left and a sign30.0 with an oblique stroke attached at the bottom right placed next to it
3.27C	Base sign 3.0 with a horizontal line 39.1 added above the sign to its left and a vertical line hanging from the extreme left end of the horizontal line

Sign No.	Description
3.28	Sign 3.0 having oblique strokes attached at the bottom left and right. Sign 34.1 superimposed. A rectangular box (sign 22.0) cutting across by a horizontal line with a vertical stroke hanging placed in the middle
3.29C	Base sign 3.0 with a sign (sign 2.0) having two oblique lines meeting at the top placed to its left and a vertical line (sign 39.0) placed on the extreme left
3.30C	Sign 3.18 and a horizontal and an oblique stroke attached at the left bottom
3.31C	A pair of signs 3.0 and sign 39.0 placed to its right
3.32C	A Base sign 3.0 with an additional sign (sign 5.0) with four oblique lines meeting at the top
3.33C	Sign 3.0 and 34.5C placed in order
3.34C	A pair of Base signs 3.0 and two oblique strokes attached on the extreme oblique line
3.35C	Base sign 3.0 with horizontal stroke ended with a hook placed at the centre
3.36C	Base sign 3.0 and 2.0 placed with a line across
3.37C	A pair of signs 3.0 surmounted with an M-shaped sign
3.38C	A pair of signs 3.0 connected by a horizontal line (sign 39.1) and a line with step hanging from the centre of the horizontal line
3.39C	Sign 3.25 attached with pair of signs 3.0 with several horizontal strokes on right oblique lines of both
3.40C	Sign 3.0 placed between two vertical lines 39.0
3.41C	Sign 3.25 and a horizontal line ending with sign 2.0 attached to its left end at top
3.42C	The Base sign 3.0 added with a wavy line (sign 34.1) placed on the left oblique line
3.43C	Wavy lines 34.1 placed on either side of the oblique lines of sign 3.0
3.44C	Base sign 3.0 with a wavy line placed to its left (sign 34.1)
3.45C	Base sign 3.0 with a wavy line (sign 34.1) attached to the right oblique line
3.46C	The Base sign 3.0 placed with a wavy line between the vertical and right oblique lines (34.1)
3.47C	Base sign 3.0 with a wavy line (sign 34.1) attached on the central vertical line
3.48C	Base sign 3.0 with a wavy line (sign 34.1) attached to its right
3.49C	Base sign 3.0 with a wavy line (sign 34.0) at the bottom of the right oblique lines
3.50C	Sign 3.18 with sign 34.1 on the right exterior
3.51C	Base sign 3.0 with oblique strokes at the top and the center line and a wavy line (sign 34.0) placed to its left
3.52C	The Base sign 3.0 is added with a vertical wavy line (sign 34.1) to its left and Y-shaped sign turned upside down to its right (sign 36.17)
3.53C	Base sign 3.0 superimposed with sign 31.1 in the middle
3.54C	The Base sign 3.0 placed with two wavy lines (sign 34.1) between the vertical and right oblique lines

Sign No.	Description
3.55C	Base sign 3.0 with wavy lines (sign 34.1) attached on both oblique lines
3.56C	A pair of Base signs 3.0 with a wavy line (sign 34.1) attached to the left oblique line of the first sign
3.57C	Two base sign 3.0 with a zig-zag line 34.1 in between them
3.58C	A pair of Base signs 3.0 with a wavy line (sign 34.1) placed on the left oblique line of the second sign
3.59C	The Base sign 3.0 added with wavy lines (sign 34.1) on the vertical line and on the right oblique line
3.60C	A pair of Base signs 3.0 with a wavy line (sign 34.1) hanging from the centre of the pair
3.61C	Sign 3.0 with a T-shaped sign placed in the left half and an hour-glass sign to its right (sign 32.1)
3.62C	A pair of Base signs 3.0 with a wavy line (sign 34.1) placed on the right oblique line of the second sign
3.63C	The Base sign 3.0 superimposed with wavy lines (34.1)
3.64C	A square box with extended vertical and horizontal lines. Sign 3.0 with oblique strokes attached at the bottom on either side and sign 34.1 superimposed on it
3.65C	Base sign 3.0 with an additional stroke added at the top of the vertical line (sign 37.9) placed to its right
3.66C	Similar to sign 3.0 with split head and sign 36.1 to its right
3.67C	Base sign 3.0 with an additional flower-like arrow (sign 13.22) mark placed horizontally to its right
3.68C	Sign 3.0 attached with oblique strokes at the middle of the central vertical line and at the bottom of the right oblique line
3.69C	Base sign 3.0 with a sign (sign 2.0) having two oblique lines meeting at the top placed to its right
3.70C	Sign 3.0 and sign 2.0 superimposed
3.71C	Sign 3.0 and sign 2.0 with an oblique stroke on its left oblique line
3.72C	Sign 3.0 with sign 2.1 to its right
3.73C	The Base sign 3.0 with a V-shaped sign 2.1 is superimposed on the top
3.74C	The sign 3.25 with sign 29.22C to the right
3.75C	Sign 3.2 with sign 2.0 with an oblique line connecting both
3.76C	Base sign 3.0 with a sign (sign 2.0) and an upward looking arrow with triangle base (sign 18.10) is placed to its extreme left
3.77C	A pair of signs 3.0 with a greater than symbol (sign 2.3) superimposed on them
3.78C	The base sign 3.25 superimposed with sign 2.0
3.79C	Similar to sign 3.25 but with the extended middle line and additional inverted v-shaped sign placed at the bottom of the vertical line (sign 2.0)
3.80C	The Base sign 3.0 is added with a Y-shaped sign turned upside down to its right (sign 36.1)

Sign No.	Description
3.81C	A pair of Base signs 3.0
3.82C	A pair of Base signs 3.0 intersecting
3.83C	The Base sign 3.0 attached with oblique lines on either side at the middle of the vertical line and another sign 3.25 placed to its right
3.84C	Sign 3.0 with three curved lines attached on its right
3.85C	The Base sign 3.0 with another sign (sign 11.0) to its right.
3.86C	The Base sign 3.0 placed with X-shaped sign (sign 30.0)
3.87C	Sign 3.25 with X sign 30.0 to its right
3.88C	Base sign 3.0 with another sign (sign 1.30) with curved bottom placed to its right
3.89C	Base sign 3.25 attached with tilted sign 1.14attached to its bottom right
3.90C	Base sign 3.0 with sign 29.1 placed to its right
3.91C	Base sign 3.0 with sign 25.0 to its right
3.92C	The Base sign 3.0 with another sign having a triangle filled horizontal lines (sign 7.0)
3.93C	Base sign 3.0 is superimposed with a horizontal line 39.1 attached to sign 2.0 at both ends
3.94C	Base sign 3.0 with an additional sign of four vertical lines hanging from a horizontal line (sign 24.4) placed to its left.
3.95C	Base sign 3.0 with two pairs of vertical lines hanging from either end of a horizontal line (sign 26.0) placed to its right
3.96C	Sign 3.0 capped with a rectangular box 21.0
3.97C	Sign 3.0 attached with left-facing open-ended rectangular 21.0 at the middle of the right oblique line
3.98C	Base sign 3.0 with a step like sign to its left top (sign 34.2)
3.99C	Base sign 3.0 with a semi-circular sign facing up (sign 17.1) placed on the top
3.100C	Base sign 3.0 with a semi-circular line (sign 17.0) placed above the sign
3.101C	Base sign 3.0 with a semi-circle on the top left and inverted L-shaped line sign 37.10 attached to the right bottom
3.102C	Base sign 3.0 with a triangle (sign 6.1) placed at the top
3.103C	The Base sign 3.0 covered with an inverted U-shaped sign (sign 16.1
3.104C	Base sign 3.0 with a circular sign (sign 19.0) placed to its left
3.105C	Sign 3.0 and 6.0 placed in order
3.106C	Similar to sign 3.27 attached with a wavy line (sign 34.1) on the right extreme oblique line
Sign No. 4 Base Sign and its variants	
4.0	Two oblique lines meet at the base of a central vertical line that somewhat looks like a three-pronged fork kept upside down
4.1	Base sign 4.0 added with a horizontal stroke on the top of the right oblique line

Sign No.	Description
4.2	Base sign (4.0) attached with an oblique line to its left
4.3	Base sign 4.0 added with an additional pair of oblique lines placed parallelly on the vertical line
Sign No. 4 Base Sign in composites	
4.1C	A pair of Base signs 4.0
4.2C	Sign 4.0 with sign 23.1
4.3C	Base sign (4.0) placed with a vertical line (sign 39.0) to its left
4.4C	Base sign 4.0 with tilted sign 37.9 placed below
4.5C	Base sign 4.0 placed inside a semi-circle (sign 15.1)
4.6C	Base sign 4.0 with a thump-like impression or seven semi-circular concentric lines to its right (sign 17.14)
4.7C	Base sign 4.0 with an hour-glass sign 32.1 to its rights
4.8C	Base sign 4.0 with a fish sign to its right
4.9C	Base sign 4.0 superimposed with another sign (sign 2.0)
4.10C	Sign 4.0 capped with a circle 19.0 on the central vertical line
4.11C	Sign 4.0 with oblique lines to the left and right with a circle 17.0 placed in the middle
4.12C	Sign 4.0 superimposed on the right oblique line with a sign 1.31
4.13C	Similar to sign 4.9C with some additional strokes on the left oblique line and below is the sign 2.1 also with some additional strokes to its exterior.
4.14C	Base sign 4.0 with sign 2.1 on its right which is intersected with the sign 2.0
4.15C	Sign 4.0 superimposed with one horizontal line and two parallel tilted lines
4.16C	Sign 2.3 placed on either side of sign 4.0 placed with a horizontal line cutting across at the base
4.17C	Sign 4.0 super imposed with sign 16.1 at the base and three horizontal lines at the top
4.18C	A pair of Base signs (sign 4.0) placed inside a pair of V-shaped sign 2.1
4.19C	There are six sign. The first sign is Base sign 2.0 and the second and fourth sign are the Base sign 4.0, third and fifth sign are vertical lines (sign 39.0) and the last one is having five oblique lines meeting at the top (sign 5.7)
Sign No. 5 Base sign and its variants	
5.0	Four oblique lines meet at the top
5.1	Four oblique lines meet at the bottom
5.2	Sign 5.0 placed facing right
5.3	Similar to sign 5.0 facing left
5.4	Sign 5.0 attached with an oblique stroke at the base of the extreme left oblique line
5.5	Sign 5.0 placed with an oblique stroke

Sign No.	Description
5.6	Inverted sign 5.0 with an additional oblique stroke attached to the right and left arms top
5.7	Five oblique lines meet at the top
5.8	Similar to sign 5.7 but inverted
5.9	Right-facing sign 5.7 but with the two exterior lines curvy in form
5.1	Similar to sign 5.7 with an oblique line at the bottom of the extreme two lines
5.11	Six oblique lines meet at the top
5.12	Sign 5.11 with a small horizontal stroke on a second curved line
5.13	Seven oblique lines meet at the top
5.14	Eight oblique lines meet at the top
5.15	A vertical line branched off with four oblique lines facing up
5.16	A vertical line branched off with six oblique lines facing down
Sign No. 5 Base sign in composites	
5.1C	A pair of Base signs 5.0
5.2C	Four curved lines join at the top with a horizontal superimposed on it
5.3C	Sign 5.11 with a horizontal line at the base
5.4C	Sign 39.0 and sign 5.0 placed to their right
5.5C	Base sign 5.7 with two vertical lines placed to its left (sign 39.2)
5.6C	Base sign 5.7 with two vertical lines placed to its right (sign 39.2)
5.7C	Sign 5.7 with two small strokes on its top and two vertical lines to the left of it
5.8C	Sign 39.4 and sign 5.0 placed in an order
5.9C	Sign 5.0 with four vertical lines (sign 39.6) to its right
5.10C	Similar to 5.0 with a wavy line (sign 34.1) superimposed over the right extreme oblique line
5.11C	Base sign 5.7 with a wavy line (sign 34.1) superimposed on the right extreme oblique line
5.12C	Base sign 5.7 with a wavy line (sign 34.1) superimposed on the left extreme oblique line
5.13C	Similar to 5.11 with a wavy line (sign 34.1) super imposed on the fifth oblique line
5.14C	Six vertical lines with little curvature meet at the top. A wavy line (sign 34.1) superimposed on the second oblique line
5.15C	Similar to 5.7 with wavy lines (sign 34.1) superimposed on the two extreme oblique lines
5.16C	Sign 5.0 with sign 2.0 superimposed.
5.17C	Sign 5.11 with sign 2.2 superimposed.
5.18C	Sign 5.11 with a greater than symbol (sign 10.6#) superimposed on it

Sign No.	Description
5.19C	Sign 5.14 connected by parallel horizontal lines in the middle
5.20C	Sign 5.0 with three horizontal lines 39.5 superimposed and a sign 2.1 placed on the right top
5.21C	Sign 16.0 superimposed with sign 5.0
5.22C	Sign 5.13 with an oblique stroke at the base of the extreme right oblique line and a plus-mark placed next to it
5.23C	Base sign 5.13 placed with rectangular sign divided into three
5.24C	Base sign 5.0 having an X-mark (sign 30.0) to its right
5.25C	Sign 5.0 superimposed with sign 2.0 and Z-like sign attached at the base of the right oblique line
5.26C	Sign 5.0 placed on a horizontal line which is capped at the bottom with a semi-circle 17.1
5.27C	Similar to sign 5.0 but the third line from the left is made in dots and the rightmost line ends with an arrow mark and a horizontal line
5.28C	Inverted base sign 5.7 and sign 4.0 placed on horizontal line 39.1
5.29C	Six vertical lines with little curvature meet at the top. A wavy line (sign 34.1) superimposed on the second oblique line. A wavy line (sign 34.1) placed between two parallel vertical lines (sign 39.2) placed to its right
5.30C	Sign 5.0 added on its left oblique line terminated with a rectangular box 22.0. Two vertical lines added with right turned-strokes at the bottom
5.31C	Five oblique lines meet at the right attached to a long horizontal line which at its right end superimposed with two vertical lines.
5.32C	A T-shaped sign placed on a sign 5.0 with a horizontal line at the bottom
5.33C	Sign 5.0 surmounted with a plus mark 29.0
5.34C	Base sign 5.0 with a V-shaped sign 2.2 attached to the right extreme oblique line
5.35C	The Base sign 5.0 having four oblique lines meeting at the top with two wavy lines (sign 34.1) placed on the second and fourth oblique line
Sign No. 6 Base sign and its variants	
6.0	A triangle
6.1	An inverted triangle
6.2	A triangle facing right
6.3	A triangle facing left
6.4	A triangle (sign 6.0) added with a horizontal stroke in the middle of the left oblique line
6.5	A triangle with an extension at its top
6.6	An inverted triangle with extended horizontal and oblique lines
6.7	Sign 6.0 with an oblique stroke placed on the right oblique line
6.8	Sign 6.0 with a pair of oblique strokes attached to the left oblique line
Sign No. 6 Base sign in composites	

Sign No.	Description
6.1C	A triangle with a vertical line added to its right (sign 39.0)
6.2C	A vertical line (sign 39.0) with a triangle (sign 6.0)
6.3C	Sign 39.0 and sign 6.1
6.4C	Sign 6.2 and sign 39.0
6.5C	A triangle (sign 6.0) placed with two vertical lines to its right (sign 39.2)
6.6C	An inverted triangle placed with two parallel vertical strokes to its right
6.7C	A triangle (sign 6.0) with a horizontal line cutting in the middle and two vertical lines to its right (sign 39.2)
6.8C	A left-facing triangle with a curved bottom and a horizontal line placed in the middle
6.9C	A triangle (sign 6.0) with an X-shaped sign (sign 30.0) at the left bottom corner
6.10C	A triangle with a split top having an X-shaped sign at the right bottom corner
6.11C	Sign 39.0, 6.3 and 2.1
6.12C	Sign 6.0 surmounted with a horizontal line 39.1
6.13C	A triangle (sign 6.0) surmounted with a horizontal line hanging with vertical strokes on either end
6.14C	A triangle (sign 6.0) surmounted with a horizontal stroke having a vertical stroke facing upward from both ends
6.15C	Sign 6.0 surmounted with sign 25.0 and 34.4 placed to its right
6.16C	A pair of bae sign 2.0 with a horizontal line attached at the base of the first sign
6.17C	A triangle (sign 6.0) having sign 2.0 attached at the base
6.18C	Right-facing triangle (sign 6.2) placed on a V-shaped sign (sign 2.1)
6.19C	An inverted triangle sign 6.1 superimposed with two oblique lines meeting at the top (sign 2.0)
6.20C	Sign 6.0 having two oblique strokes attached to the right arm on the interior and sign 2.0 on the left arm exterior
6.21C	A pair of signs 6.0 with a sign 2.0 in the middle
6.22C	Two triangles one beside other is stacked upon one triangle at the earlier middle
6.23C	A triangle inside another triangle
6.24C	Base sign 6.0 within it at the center is a rectangle 22.0
6.25C	A triangle 6.0 and a square 22.7 to its right
6.26C	Sign 6.0 and sign 9.0 attached with an oblique stroke at the bottom right
6.27C	Left-facing triangle 6.3 having a semi-circle 17.3 to its left
6.28C	Sign 6.3 topped with sign 36.2
6.29C	A triangle (sign 6.0) with a base horizontal line extended and split on its left
6.30C	An upside-down turned triangle superimposed with an oblique line ended with upward and downward extended strokes on either end sign 37.11

Sign No.	Description
6.31C	A triangle (Sign 6.1) surmounted with sign 13.9
6.32C	An upward-facing arrow mark (sign 13.0) with an inverted triangle surmounted on it (sign 6.1)
6.33C	Sign 6.0 surmounted with a plus-mark 29.0
6.34C	Sign 6.0 surmounted with a plus mark 29.0 and two horizontal strokes to its right at the bottom
6.35C	A triangular sign (sign 6.0), sign 26.0 and 5.7 topped with a vertical line
6.36C	Sign 6.0 placed on top of sign 24.6 and to its left sign 30.0
6.37C	A triangle (sign 6.0) superimposed with sign 3.0 and a sign 2.2 placed below on its left
6.38C	A triangle and W-shaped sign and two vertical lines with a horizontal line placed in the middle
6.39C	A triangle topping a interval branched of line sign 35.6
6.40C	Right facing triangle attached with T-light stroke in the middle added to its left
Sign No.7 Base sign and its variants	
7.0	A triangle filled with horizontal strokes at regular interval
7.1	Inverted base sign 7.0
7.2	Sign 7.0 placed horizontally facing right
7.3	Sign 7.0 attached with an oblique stroke bottom right
7.4	Sign 7.0 attached with two oblique strokes from the bottom right and left also a vertical line in the middle
Sign No. 7 Base sign in composites	
7.1C	A base sign 7.0 a triangle divided by a vertical line filled with horizontal strokes at regular intervals is divided at the centre with a vertical line sign 39.0
7.2C	Similar to the base sign (sign 7.0) surmounted with a horizontal line (sign 39.1)
7.3C	Sign 7.1 placed upside down with sign 2.3 attached
7.4C	A triangle filled with horizontal strokes at regular intervals having four oblique lines placed at the top
7.5C	A triangle filled with horizontal strokes at regular intervals having an oblique line placed on either at the top. A horizontal line (sign 39.1) surmounted on it
7.6C	A triangle filled with horizontal strokes at regular intervals having two oblique lines placed on either at the top. A horizontal line (sign 39.1) surmounted on it
7.7C	A triangle filled with horizontal strokes at regular intervals having three oblique lines placed on either at the top. A horizontal line (sign 39.1) surmounted on it
7.8C	A triangle filled with horizontal strokes at regular interval having four oblique lines placed on either at the top. A horizontal line (sign 39.1) surmounted on it
7.9C	Sign 23.3 having additional three oblique strokes attached on either at the middle with sign 2.2 and 2.3
7.10C	A base sign 7.0 triangle filled with horizontal strokes at regular intervals is surmounted with the sign 25.0

Sign No.	Description
7.11C	A base sign 7.0 triangle filled with horizontal strokes at regular intervals is surmounted by the sign 25.1
7.12C	The sign 7.10C placed with Ashokan-Brahmi “ma” like sign to its right
7.13C	The sign 25.5 surmounted on sign 7.1
7.14C	Six oblique lines meet at the base and divided by three horizontal lines. Similar to goat and tiger game
7.15C	A triangle filled with horizontal strokes at regular intervals with a triangle gap in the middle and a horizontal line placed on top of with two pairs of small strokes facing downward placed on both extreme ends
7.16C	Sign 7.0 attached with sign 21.0 and 21.1 at top
7.17C	Sign 7.0 having a sign 4.0 surmounted and sign 25.0 and oblique line on the right
7.18C	Sign 7.0 covered with 21.0
7.19C	Similar to base sign 7.0 superimposed with sign 26.0
7.20C	Sign 7.0 surmounted with a horizontal line and sign 2.0 hanging at both ends
7.21C	A left-facing stylish fish superimposed on a base sign 7.0
7.22C	Sign 7.0 with sign 11.0 to its right
7.23C	Similar to base sign 7.0 with an upward stroke at the top right and the internal strokes extending left which is cut by a vertical stroke
7.24C	Base sign 7.0 attached with a horizontal line 39.1 with sign 27.2 to the left
7.25C	Sign 7.0 attached with a wavy line 34.1 on the right oblique line and an additional oblique lie over a left oblique line
7.26C	A triangle filled with vertical strokes and an inverted identical sign placed below
7.27C	A double cone with a pointed top and bottom filled with curved lines in the interior
7.28C	A triangle divided by a horizontal line and sign 32.0 placed to its right connected by a horizontal line
7.29C	A pair of signs 7.0 with a loop at the top
7.30C	Sign 7.0 with extended horizontal strokes, sign 36.0 with three horizontal strokes and right facing sign 5.11 and a left-facing hut-like sign 8.5
7.31C	There are four sign. The first one is sign 2.2 the second one is a base sign 2.0, and the third one is a 7.0 superimposed with sign 25.1 having oblique strokes at the base
7.32C	Sign 7.0 filled with horizontal lines and an oblique stroke attached on either side at the bottom and sign 21.1 placed to its left
Sign No. 8 Base sign and its variants	
8.0	A triangle bisected by a vertical line
8.1	Upside down of sign 8.0
8.2	Similar to sign 8.0 with a curved bottom
8.3	A boat-like sign facing left

Sign No.	Description
8.4	A bell/hut-like sign
8.5	A bell/hut-like sign facing left
Sign No. 8 Base sign in composites	
8.1C	A pair of triangles bisected by a vertical line
8.2C	Sign 8.3 with a horizontal line on the top
8.3C	Sign 8.0 attached with sign 5.7 which is capped with a horizontal line
8.4C	Similar to sign 8.0 with multiple horizontal lines inside it
8.5C	A pair of bell/hut-like sign with a horizontal placed on the inner hut-like sign but shown in elongated form
8.6C	A pair of bell/hut-like sign with a horizontal placed on the inner hut-like sign
8.7C	A hut-like sign with a vertical stroke surmounted on it
8.8C	Base sign 8.0 super imposed with sign 4.0 which is further superimposed by sign 34.1 on the later left line
Sign No. 9 Base sign and its variants	
9.0	A vertical line branched off on either side at the top from the middle
9.1	Base sign 9.0 added with a vertical stroke in the middle of the left oblique line
9.2	Base sign 9.0 suspended with a vertical stroke attached to the top edge of the right oblique line
9.3	Sign 9.0 with oblique strokes on either side
9.4	Similar to base sign 9.0 with a step attached to the left oblique line
9.5	Similar to base sign 9.0 with a step attached to the left and right oblique line
9.6	Base sign 9.0 but having a pair of oblique lines
Sign No. 9 Base sign in composites	
9.1C	Base sign 9.0 with an additional vertical line (sign 39.0) added to its left
9.2C	Base sign 9.0 with an additional vertical line (sign 39.0) attached to its left
9.3C	Base sign 9.0 with an additional vertical line (sign 39.0) attached to its right
9.4C	Sign 9.0 placed over a horizontal line 39.1
9.5C	Base sign 9.0 surmounted with a horizontal line 39.1 on the top
9.6C	Base sign 9.0 placed above parallel horizontal lines 39.3
9.7C	Base sign 9.0 raised on two parallel lines with an upturned bend placed at the base
9.8C	Base sign 9.0 having two oblique lines on either side with a vertical line placed on either side (sign 39.0)
9.9C	Base sign 9.0 added with two parallel vertical lines to its right (sign 39.2)
9.10C	Sign 39.0, 9.0 and 2.1 placed in order
9.11C	A pair of Base signs 9.0

Sign No.	Description
9.12C	A pair of signs 9.0 with a small oblique stroke attached to the top of the central vertical line of the second sign
9.13C	Base sign 9.0 repeated thrice
9.14C	Base sign 9.0 repeated thrice with all joining together at the base
9.15C	A pair of Base signs 4. placed inside a circle (sign 19.0)
9.16C	Base sign 9.0 in three numbers raised above a rectangle (22.0) and two vertical lines added to its left (sign 39.2)
9.17C	Base sign 9.0 is superimposed with a rectangle in the middle (sign 22.0)
9.18C	Base sign 9.0 placed inside sign 15.0 which has a conical base
9.19C	Base sign 9.0 placed inside a semi-circle (sign 15.1)
9.20C	Sign 9.0 placed on sign 17.8
9.21C	Base sign 9.0 placed a sign (sign 17.9)
9.22C	Base sign 9.0 surmounted on a bird-like sign
9.23C	Sign 9.0 attached with horizontally flipped L-shape sign
9.24C	Base sign 9.0 placed with right facing square bracket (sign 21.2) to its right
9.25C	Base sign 9.0 superimposed sign 21.0
9.26C	Base sign 9.0 attached to a sign 36.0 on its left oblique lines
9.27C	Base sign 9.0 attached to a small sign 36.0 on its left oblique lines
9.28C	Base sign 9.0 surmounted on an x-shaped sign (sign 30.0)
9.29C	Base sign 9.0 attached with a rectangle box divided into 15 squares on its right at the base 22.5
9.30C	Sign 9.0 and sign 1.1 placed to its right
9.31C	Sign 9.0 with a vertical line attached with a greater than symbol at the top placed to its right
9.32C	Sign 9.0 attached with a spiral to the right arm
9.33C	Sign 9.0 attached with a greater-than-like sign
9.34C	Sign 9.2 having a curved line superimposed on it
9.35C	Base sign 9.0 superimposed with sign 34.1
9.36C	Base sign 9.0 added with a wavy line 34.0 on its left and right facing semi-circle 17.2 at the base
9.37C	Base sign 2.1 and 9.0 with wavy line 34.1 superimposed on the middle vertical line
9.38C	Base sign 9.0 with a horizontal line at bottom and to the left of it two intersecting lamp like sign 37.9 & 37.10 is also attached
9.39C	Base sign 9.0 is surmounted on a comb like sign 24.7 facing downward and two circles (sign 19.0) attached to the vertical line just below the branching off.

Sign No.	Description
9.40C	A combination of three sign. The first Base sign 9.0 having an oblique stroke attached to its right. The second sign is a bow and arrow (sign 18.3) and the third sign is a pair of oblique lines joining the vertical line on either side (sign 3.25)
9.41C	Base sign 9.0 head portion is superimposed with a rectangle which is drawn over a horizontal line which has a vertical line, a lesser than sign and an open rectangle
9.42C	Base sign 9.6 surmounted on a circle (sign 19.0)
9.43C	Sign 9.6 with sign 2.1 to its right
Sign No. 10 Base sign and its variants	
10.0	A vertical line branched off on either side at the top from the middle placed horizontally facing left
10.1	Base sign 10.0 facing right
10.2	Base sign 10.0 facing right with a V-shaped sign attached to its left
10.3	Sign 10.1 with a spiral attached to the top arm
10.4	Sign 10.0 with an oblique stroke attached bottom left
Sign No. 10 Base sign in composites	
10.1C	Base sign 10.0 bisected by a vertical line (sign 39.0)
10.2C	Base sign 10.0 attached with a semicircle to its right (sign 17.3)
10.3C	Similar to sign 10.0 with a circle 1 attached to its left
10.4C	A vertical line with two oblique strokes branched off at the right end and the left end having a vertical line attached with a greater than symbol on its right
10.5C	Sign 5.1 with two vertical lines 39.2 at the left end and sign 30.9 with an oblique stroke attached at the bottom left placed next to it
Sign No. 11 Base sign and its variants	
11.0	Two oblique lines placed on either side meet at the centre of the vertical line
11.1	Base sign 11.0 with an oblique stroke attached at the base of the right oblique line
11.2	Base sign 11.0 with an oblique stroke attached at the base of the left oblique line
11.3	Base sign 11.0 attached with a horizontal stroke to its right at the top of the vertical line
11.4	Base sign 11.0 attached with a horizontal stroke to its right at the top of the vertical line
11.5	Sign 11.0 with an oblique stroke attached on the top right
11.6	Base sign 11.0 with a downward-facing oblique stroke attached on the right vertical line
11.7	Base sign 11.0 with a downward facing oblique stroke attached on the left vertical line
11.8	Base sign 11.0 with an oblique stroke placed at the base of the vertical line cutting across the right oblique line
11.9	Base sign 11.0 with an oblique stroke attached at the base of the vertical line
11.1	Sign 11.0 added with two horizontal strokes to its left top

Sign No.	Description
11.11	Similar to sign 11.0 with flag-like strokes on the top right
11.12	Similar to the sign 11.0, a pair of oblique lines attached on either side to the central vertical line
Sign No. 11 Base sign in composites	
11.1C	Base sign 11.0 with a vertical line to its right (sign 39.0)
11.2C	Base sign 11.0 with a vertical line (sign 39.0) placed to its left
11.3C	Base sign 11.0 placed with a vertical line (sign 39.0) on either side
11.4C	Sign 11.0 with a horizontal line 39.1 placed on top
11.5C	Sign 11.0 added with a horizontal line having an oblique stroke at the left end placed on the vertical line
11.6C	Base sign 11.0 surmounted with a horizontal line 39.1
11.7C	Similar to sign 11.5 with a horizontal line 39.1 on top
11.8C	Similar to sign 11.4 with a horizontal line 39.1 on top
11.9C	Base sign 11.0 with horizontal line (sign 39.1) placed at the base
11.10C	Sign 11.0 placed with parallel horizontal lines 39.3
11.10C	Sign 11.0 surmounted with a parallel horizontal line 39.3
11.11C	Base sign 11.0 in a pair
11.12C	Base sign 11.0 in a pair intersected at middle
11.13C	A pair of base sign 11.0 joined together at the top
11.14C	Base sign 11.0 attached with another sign (sign 11.0) to its right at the top
11.15C	Base sign 11.0 attached with two small oblique strokes at the bottom of the vertical as well as oblique lines
11.16C	A pair of base sign 11.0 with oblique strokes at the top
11.17C	Sign 11.13C with sign 39.1 on mid
11.18C	Base sign 11.0 in a pair. The first sign is added with a greater than symbol on its right (sign 2.2). The second symbol had a vertical line (sign 39.0) in addition to the greater than symbol to its right
11.19C	Sign 11.1 with an addition of a horizontal line with an oblique stroke attached to its right end placed at the cross
11.20C	Base sign 11.0 placed inside an inverted U-shaped sign 15.1
11.21C	The base sign 11.0 covered with an upside down U-shaped sign 15.1 with oblique strokes attached at the base
11.22C	A pair of base sign placed inside an inverted U-shaped sign 15.1
11.23C	Base sign 11.0 in a pair with a wavy line sign (sign 34.1) is placed vertically to its left
11.24C	Base sign 11.0 covered with two semicircles (sign 16.1)
11.25C	Base sign 11.0 placed with a semi-circle 17.1 at the top

Sign No.	Description
11.26C	Base sign 11.0 placed with a horizontal stroke (sign 39.1) and a semicircle 17.1 at the top of the vertical line
11.27C	Base sign 11.0 with another sign (sign 1.30) placed on its right
11.28C	Base sign 11.0 with another sign placed to its left (sign 1.0)
11.29C	Base sign 11.0 with another sign (sign 2.0) placed to its right
11.30C	Base sign 11.1 placed with sign 2.0 on right
11.31C	Base sign 11.0 attached with two signs, one at the top right (sign 22.7) and another at the bottom left (sign 2.0)
11.32C	Base sign 11.0 superimposed on the left with sign 36.15
11.33C	Sign 11.0 placed with sign 36.0 to its right
11.34C	Base sign 11.0 with sign 2.0 to the right and it is superimposed with sign 2.1 on its left oblique line
11.35C	Base sign 11.0 with an additional taurine sign placed on its left (sign 40.0)
11.36C	Base sign 11.0 placed with a triangle 6.0 to its right
11.37C	Sign 11.0 with sign 1.0 having a loop on the right arm top
11.38C	Sign 11.0 with sign 30.0
11.39C	Sign 4.0 with sign 23.0 to its right
11.40C	Sign 11.4 with a stroke to left at the top and an arrow to the right with a stroke at the bottom to the left
11.41C	A pair of sign 11.12 placed on a horizontal line each
11.42C	Sign 11.0 attached with a horizontal line 39.1 terminated with sign 17.7
11.43C	Sign 39.0 with sign 11.0 attached with a semi-circle 17.3 top left
11.44C	Sign 11.0 at the left and sign 2.0 in the middle and a vertical line attached with a horizontal stroke terminated with a vertical line branched-off
11.45C	Base sign 11.0 with a hook like sign 37.3, two parallel vertical lines 39.2, all connected at top with a horizontal line. Further right of it sign 2.1 with a horizontal line on the top
11.46C	Base sign 11.0 superimposed on the right side with two vertical strokes 39.2
11.47C	Sign 11.0 attached sign 12.1 on top right
11.48C	Sign 11.0 superimposed with sign 2.2
11.49C	Base sign 11.0 and to the right of it one vertical line with a spiral at end
11.50C	Base sign 11.0 with sign 1.30 attached to the top
11.51C	Base sign 11.0 attached with greater than symbol 2.3 to the top vertical line
11.52C	Sign 11.0 placed on a horizontal line and attached to sign 37.10 on its left
11.53C	Sign 11.4C and curved lines joining to the right superimposed on it
11.54C	Sign 11.12 attached with sign 39.1
11.55C	Similar to sign 11.4C and sign 2.0 attached at the left end

Sign No.	Description
11.56C	Sign 11.12 attached with sign 2.0 on the top
11.57C	Sign 11.12 attached with sign 10.1 at the top
11.58C	Base sign 11.0 with a line branching off to the left from top
Sign No. 12 Base and its varients	
12.0	A vertical line branched off on either side both at the top and bottom
12.1	A vertical line branched off on either side both at the top and bottom placed horizontally
12.2	A vertical line branched off on either side both at the top and bottom and placed with an arrow on the right top oblique line
12.3	Sign 12.0 with oblique strokes added on either side
Sign No. 12 Base sign in composites	
12.1C	A pair of vertical lines branched off on either side both at the top and bottom
12.2C	A plus mark branched off on either side at the end
12.3C	A vertical line branched off on either side both at the top and bottom and placed with two parallel semicircle lines joining both top and bottom left oblique lines
Sign No. 13 Base sign and its variants	
13.0	An arrow facing upward
13.1	An arrow facing downward
13.2	An arrow facing left
13.3	An arrow facing right
13.4	Sign 13.0 with a vertical stroke attached to the right arm
13.5	An arrow facing right with a small oblique stroke attached at the base
13.6	An arrow mark facing up
13.7	An arrow mark facing down
13.8	An arrow mark facing left
13.9	An arrow facing up
13.1	An arrow mark facing down
13.11	A downward-facing arrow with a curved vertical line
13.12	An upward-facing arrow
13.13	A downward-facing arrow with a vertical stroke added to the left oblique line
13.14	A downward-facing arrow with a vertical stroke added to its right oblique line
13.15	A downward-facing arrow with a vertical stroke on both ends attached to the oblique lines
13.16	An upward-facing arrow with a vertical stroke on both ends attached to the oblique lines
13.17	Similar to sign 13.16 but the head portion is arched instead of pointing

Sign No.	Description
13.18	A W-shaped stroke attached to a curved line
13.19	A vertical line placed at the centre of the U-shaped with oblique strokes attached at the top of both arms
13.2	A flower-like arrow facing upward
13.21	A flower-like arrow mark facing down
13.22	An arrow mark facing right
13.23	A flower-like arrow facing downward with an oblique stroke added to its left at the top
13.24	An upward-facing flower tip arrow having an oblique stroke attached bottom right
13.25	Similar to sign 13.20 but in right facing U-shape
13.26	Similar to base sign 13.21
13.27	Sign 13.20 with double line arrow
13.28	Similar to sign 13.22 with double line tip
13.29	An upward-facing arrow with a triangle head covered with a flower-shaped head
13.3	A horizontal line shown with a flower-like arrow at both ends
13.31	A flower-shaped arrow mark placed horizontally and two oblique strokes attached to the stem
13.32	Right-facing arrow with triple line tip
13.33	A vertical line having arrows at both ends
13.34	Two vertical lines terminated with an arrow mark at the top
13.35	Two horizontal lines terminated with an arrow mark
Sign No. 13 Base sign in composites	
13.1C	Base sign 13.0 with a vertical line to its right (sign 39.0)
13.2C	An arrow mark facing upward (sign 13.0) and a vertical line added to its left (sign 39.0)
13.3C	Base sign 13.0 with two vertical lines added on its left (sign 39.2)
13.4C	Base sign 13.0 with three vertical lines to its right (sign 39.4)
13.5C	Three vertical lines (sign 39.4) with upward facing arrow (sign 13.0) to its right
13.6C	The base sign 13.0 having an oblique line placed over its left oblique line at the middle
13.7C	Base sign 13.0 with an oblique line on the extended right line
13.8C	Similar to sign 13.17 but only its left half is present super imposed with sign 22.0 and sign 39.0 placed to its left and sign 17.0 to the right
13.9C	Similar to sign 13.0 with oblique strokes placed on both arms and extended tip
13.10C	Sign 13.2 facing right with a parallel oblique stroke placed above
13.11C	Sign 39.0 with sign 13.0 which is attached with a sign 2.1 to its middle line
13.12C	Sign 39.2 with sign 13.0 superimposing sign 39.0

Sign No.	Description
13.13C	A vertical line (sign 39.0) attached with a downward-facing arrow 13.21 to its right
13.14C	Similar to sign 13.26 but placed on a two-parallel line 39.2
13.15C	Base sign 13.20 of a flower-like arrow mark facing left surmounted on two parallel vertical lines (sign 39.2)
13.16C	Sign 13.20 and to its left sign 39.0 attached with a horizontal stroke at mid is placed
13.17C	Sign 39.0 and sign 13.15
13.18C	Sign 13.16 with two parallel vertical lines 39.2 placed to its left
13.19C	Sign 13.15 placed on a horizontal line 39.2 and superimposed with another horizontal line 39.2 placed in the middle
13.20C	Hallow hourglass shape symbol superimposed with sign 4.0 and right facing sign 13.16 attached with sign 17.1
13.21C	A vertical line placed at the base of a right-facing arrow sign 13.6 with a triangle head
13.22C	A downward-facing arrow 13.1 placed on three vertical lines 39.4
13.23C	An upward-looking arrow mark 13.6 with a square bracket (sign 21.0) at the bottom
13.24C	Similar to sign 13.35 An arrow mark placed over an open-ended rectangular box 21.0
13.25C	Two parallel horizontal lines with oblique strokes attached at both ends and sign 13.9 placed at the centre
13.26C	A left-facing arrow with an oblique stroke attached to the oblique line and a diamond-shaped sign added below at the middle of the horizontal line
13.27C	Sign 21.1 attached to the left end of right-facing sign 13.16stroke
13.28C	A pair of arrow marks (sign 13.0)
13.29C	A fair upward-facing arrow 13.0 marks with three parallel vertical strokes 39.4 to its right
13.30C	Sign 13.0 with extending tip and to the right placed sign 37.0
13.31C	A up facing arrow mark with a horizontal line attached with an oblique stroke attached to it placed over it
13.32C	Sign 13.0 with greater than symbol attached to it (sign 2.3)
13.33C	Sign 13.6 with an oblique stroke at its top left
13.34C	Sign 13.0 having a sign 2.2 attached to its left on the vertical line
13.35C	A flower-like arrow facing downward with a vertical line branched off
13.36C	Sign 13.35C and a vertical stroke added to its left (sign 39.0)
13.37C	Similar to sign 13.24 but with a branched-off base line
13.38C	Inverted sign 13.35C
13.39C	Sign 13.15 with a branched vertical line

Sign No.	Description
13.40C	Sign 13.16 with an oblique stroke attached to its bottom right and sign 37.9 attached to its top left
13.41C	Sign 13.16 with a horizontal stroke at the bottom and placed inside sign 17.1
13.42C	Sign 13.15 with a stroke on its left and a V-shaped sign 2.1 placed to its right
13.43C	Sign 13.9 with a horizontal stroke in its shaft and to the right sign 29.15
13.44C	An upward-looking arrow mark 13.6 with a circle 19.0 over the arrowhead
13.45C	Sign 13.9 with sign 34.21C placed to its right
13.46C	A downward arrow 13.7 surmounted by star-like sign made of four triangles
13.47C	Sign 13.1 superimposed with sign 37.10 and an oblique stroke at the centre
13.48C	Sign 13.0 super imposed with sign 2.1 and to the right sign 1.0 is placed
13.49C	Base sign 13.0 with a T-shaped sign to its right
13.50C	Sign 13.7C placed on sign 17.1 and below it signs 13.0 and to its right 34.1
13.51C	Sign 35.14 with a downward facing arrow (sign 13.1) and sign 16.1 surmounted with a sign 17.4 on the right arm
13.52C	Sign 35.0 combined with 35.14
13.53C	Similar to sign 13.0 but with a semicircle head having attached one oblique line to the bottom and two on the mid of the shaft
13.54C	Similar to sign 13.0 but with a semicircle head having attached an oblique stroke on the bottom right and sign 34.1 to its shaft
13.55C	Sign 13.0 attached to sign 34.1 to the right of the shaft
13.56C	Sign 13.0 attached with sign 3.0 at bottom and sign 34.1 to the right of its shaft
13.57C	Downward facing arrow attached to an oblique line on the left
13.58C	An arrow similar to 13.24 but the shaft is in box fashion and the tip is attached with two strike-like sign 2.1
13.59C	Downward facing flower-shaped arrow mark having a flag-like three strokes attached on top right
13.60C	Similar to sign 13.20 but with a spiral arrow shaft with a head on left
13.61C	Similar to sign 13.20 but with a spiral arrow shaft with a head on right
13.62C	Base sign 13.20 of a flower-like arrow mark facing upward placed in a U-shaped sign (sign 15.0)
13.63C	Sign 13.20 with a U-shaped shaft
13.64C	Sign 13.8 attached with parallel semicircles to the right
13.65C	A cross or plus mark with a flower like an arrow head
Sign No. 14 Base sign and its variants	
14.0	A fish sign
14.1	A fish sign
14.2	A fish sign

Sign No.	Description
14.3	A fish sign
14.4	A fish sign facing left
14.5	A fish sign facing right
14.6	Upside down of sign 14.3
14.7	Stylized fish
14.8	Stylized fish
14.9	Similar to the sign 14.3 having a loop at the top
14.1	X-shaped sign placed inside an inverted U-shaped sign with a pointed top
14.11	Sign 14.2 with two vertical lines placed at the top of the arms and an oblique line cut across at the bottom right
14.12	Sign 14.1 having oblique strokes on all the ends
14.13	Similar sign 14.8 exteriorly covered with several oblique lines
14.14	Stylized fish facing right
14.15	A fish sign facing left
Sign No. 14 Base sign in composites	
14.1C	Sign 14.8 with a vertical line from the centre
14.2C	A vertical line (sign 39.0) and sign 14.6 to right
14.3C	Stylized fish with two vertical lines to its left (sign 39.2)
14.4C	Fish sign (sign 16.0) with two vertical lines (sign 45.1) to its right
14.5C	Left-facing fish similar to sign 14.4 below it there is an oblique line
14.6C	Base sign 14.0 with another U-shaped sign to its right (sign 15.0)
14.7C	A fish sign 14.0 with another sign to its right (sign 2.0)
14.8C	Sign 14.3 with two concentric semi-circles above (sign 16.1)
14.9C	Similar to the sign 14.3 having a semi-circle shape (sign 17.6) at the top
14.10C	Sign 14.4 and 14.3
14.11C	Similar to sign 14.3 which is topped upon down-facing arrow 13.7
14.12C	Fish similar to 14.10 but placed upon a vertical line attached with sign 36.0 on the right
14.13C	A pair of sign 14.3 superimposed
14.14C	A pair fish-like sign 14.3 with a sign 10.0
14.15C	A ladder-like sign with split vertical lines at the base
14.16C	Sign 14.1 superimposed with sign 39.5
Sign No. 15 Base sign and its variants	
15.0	U-shaped sign
15.1	Inverted U-shaped sign

Sign No.	Description
15.2	Two curved lines placed vertically and cutting across at the bottom
15.3	Inverted U shape sign with an oblique stroke attached to bottom-right
15.4	A half U-shaped sign with a vertical line and an oblique stroke attached on the right and left respectively
15.5	A jar-like sign
15.6	Inverted jar-like sign
15.7	A jar symbol with two arms
15.8	U-shaped sign with three oblique strokes attached to the top right arm
15.9	A jar-like sign 15.0 with three horizontal strokes attached on both arms
Sign No. 15 Base in composites	
15.1C	Base sign 15.0 with a vertical line (sign 39.0) almost at the centre
15.2C	Base sign 15.0 with a vertical line (sign 39.0) placed at the centre
15.3C	Base sign 15.1 with a vertical line (sign 39.0) placed at the centre
15.4C	Base sign 15.0 having a vertical line placed to its left (sign 39.0)
15.5C	Sign 15.0 placed in an inverted position and sign 39.0 next to it
15.6C	Sign 15.3 with sign 39.0 to its right
15.7C	A parallel vertical line (sign 45.1) with sign 15.0
15.8C	Sign 45.2 with sign 7.14
15.9C	Sign 15.0 intersected with sign 39.1 on top
15.10C	U-shaped sign trisected by three parallel horizontal lines
15.11C	Sign 15.0 with a circle placed on both arms top and a vertical line placed at the centre
15.12C	A U-shaped sign with a circle in the middle
15.13C	Sign 2.0 placed inside a sign 15.0
15.14C	Base sign 2.0 placed inside an inverted U-shaped sign
15.15C	Sign 2.1 with an arrow placed inside a U-shaped sign
15.16C	Base sign 2.0 placed inside the upside-down U-shaped sign (sign 15.0) with three horizontal lines above (sign 39.5)
15.17C	Base sign 15.0 with another small U-like sign closed (sign 17.5) with a horizontal line placed inside the U-shaped sign
15.18C	An inverted U-shaped sign with a semicircle 17.6
15.19C	Base sign 15.0 with another sign having one vertical line and two oblique lines meeting at the top (sign 3.0) placed inside the U-shaped sign
15.20C	Sign 15.1 and sign 3.0 placed within it
15.21C	Base sign 15.0 with another sign (sign 4.0) placed in the centre
15.22C	Base sign 15.0 with a triangle (sign 6.0) placed inside the U-shaped sign

Sign No.	Description
15.23C	Sign 15.1 with an oblique stroke attached to its bottom right end and sign 6.1 is placed within it
15.24C	A U-shaped sign having triangle in the middle
15.25C	Sign 11.0 placed inside an inverted sign 15.0
15.26C	Base sign 15.0 with another sign (sign 11.0)
15.27C	A U-shaped sign with oblique strokes attached at the top facing inward and base sign 11.0 in the middle
15.28C	Sign 15.0 with sign 1.3 placed inside
15.29C	An inverted U-shaped sign with sign 1.30 in the middle
15.30C	Sign 1.30 placed inside a U-shaped sign (sign 15.0)
15.31C	Sign 1.30 placed inside a sign 15.0
15.32C	Sign 1.0 placed inside a sign 15.0 with a sign 39.0 to its right
15.33C	Sign 15.0 having an upward-facing arrow at the left arm top and a downward-facing arrow on the right arm top with sign 1.0 in the middle
15.34C	Inverted U-shaped sign with sign 1.30 in the middle and a sign having two parallel vertical lines divided by two parallel horizontal lines making a square box at the centre
15.35C	Base sign 15.0 with Asokan Brahmi “ma” like sign placed inside a U-shaped sign (sign 1.0). The right arm of the U-shaped sign is shortened and attached with a horizontal stroke and two vertical strokes hanging from it
15.36C	Base sign 15.0 with an Asokan-Brahmi “ma” like sign placed inside (sign 1.0) and two parallel lines placed below the U-shaped sign (sign 39.3)
15.37C	Base sign 15.0 with a small Asokan-Brahmi “ma” like sign to its left (sign 1.30)
15.38C	A base sign placed inside a U-shaped sign touching both arms and two horizontal lines drawn below
15.39C	A ladder (sign 23.0) with a horizontal line with two parallel vertical strokes hanging from both ends (sign 25.0) and an arrow mark (sign 13.0) and a sign 1.30 placed inside a jar symbol (sign 15.5)
15.40C	An upside-down U-shaped sign with a vertical stroke in the middle
15.41C	A plus mark 29.0 placed inside a U-shaped sign with the top end closed
15.42C	Base sign 15.0 with two small U-shaped signs placed inside at the top
15.43C	Base sign 15.0 with a pair of V-shaped signs placed inside (sign 2.1)
15.44C	Star-like sign 31.14 inside the inverted U-shaped sign
15.45C	Sign 31.2 placed inside sign 15.0
15.46C	Sign 15.1 with sign 37.8 inside it
15.47C	A half-circle 17.1 attached at the base of sign 15.0
15.48C	Sign 21.1 placed inside sign 15.0
15.49C	Sign 33.1 placed inside a sign 15.0

Sign No.	Description
15.50C	An inverted U-shaped sign with an oblique stroke attached at the bottom interior of the right arm
15.51C	A U-shaped sign with outturn arms having a horizontal line in the middle
15.52C	An upside-down U-shaped sign with sign 2.1 attached at the top and two oblique strokes placed on either side
15.53C	Inverted sign 15.1 with sign tilted 22.0
15.54C	Sign 15.0 capped with a horizontal line sign 39.1 upon which sign 15.1 and 2.0 are placed
15.55C	Sign 15.1 with a vertical line and a horizontal stroke on the top
15.56C	Sign 37.6 placed over sign 15.1
15.57C	Sign 15.0 sign 38.6 to its right
15.58C	A vertical line 39.0 attached with a step-like sign 34.2 and to the right sign 15.1
15.59C	Sign 15.1 with sign 13.16 to its right
15.60C	Sign 15.0 and sign 2.0 superimposed on sign 39.4
15.61C	A U-shaped sign (sign 15.0) placed with a sign 2.1 and another U-shaped sign 15.0 on the interior
15.62C	Base sign 11.0 covered with a U-shaped sign 15.1 and a wavy line (sign 34.1) placed to its right
15.63C	A bird-like sign with sign 5.7 placed inside 15.0
15.64C	Sign 15.0 with a horizontal line placed inside and to its right sign 36.6 is superimposed
15.65C	A U-shaped sign superimposed with Tamil ‘ma’ like sign on its right arm
15.66C	Base sign 4.0 placed on the left arm of the U-shaped sign (sign 15.0) and two vertical lines placed at the centre (sign 39.2) and sign 2.1 placed to its right
15.67C	A pair of sign 15.1 with branched-of ends
15.68C	Base sign 15.0 with a sun sign placed to its right (sign 19.4)
15.69C	Base sign 15.0 with another X-like sign (sign 30.0)
15.70C	A Sign 15.0 with sign 15.0 attached with greater than symbol 2.3 to its left arm and sign 37.16 to its right with a base sign 3.0 to its right and below these 39.1
15.71C	Sign 15.1 attached with two vertical lines one on top and one on the right both with a half-circle attached to their end
15.72C	Sign 15.1 with branched-off ends and sign 15.1 placed within it and sign 11.0 and sign 2.027with an oblique line attached placed to its right
15.73C	Sign 15.0 with inverted sign 36.17 placed inside it and to the right placed similar sign 29.7 but with three strokes
15.74C	Sign 15.0 placed on sign 39.1 and to the right sign 34.5 is placed
15.75C	A jar-like sign with a circle 19.0 inside
15.76C	Sign 15.12C placed on the extreme right to its left S-like sign and a half jar-like sign placed

Sign No.	Description
15.77C	Sign 15.0 in small size placed within the top of jar sign with conical vase
15.78C	Sign 15.6 with sign 39.1 placed above
15.79C	A jar-shaped sign placed on a vertical line
15.80C	Sign 15.0 with L-shaped stroke added at both arms top with sign 9.0 placed at the centre
15.81C	Sign 15.1 super imposed with sign 37.20
15.82C	Sign 15.1 and 15.0 adjoined like a wave with sign 9.0, 37.1 and 10.1 placed in between
15.83C	Sign 15.1 with sign 36.1 placed within it
Sign No. 16 Base sign and its variants	
16.0	Two concentric U-shaped sign
16.1	Two U-shaped lines placed upside down
16.2	Three concentric U-shaped sign
16.3	Three concentric U-shaped lines placed upside down
16.4	Two concentric U-shaped sign with a horizontal stroke placed with a vertical stroke at the end attached at the top right
16.5	Two concentric upside-down U-shaped sign with a horizontal stroke placed with a vertical stroke at the end attached at the bottom right
16.6	Sign 16.0 placed in an inverted position with a small stroke on the left arm
16.7	Sign 16.0 divided by horizontal and vertical strokes
Sign No. 16 Base in composites	
16.1C	Base sign 16.0 with a vertical stroke at the centre (sign 39.0)
16.2C	Base sign 16.0 with a vertical stroke at the centre extended below (sign 39.0)
16.3C	A vertical line (sign 39.0) and two concentric U-shaped sign (sign 16.0)
16.4C	Sign 16.0 with an oblique line from the right placed interior
16.5C	Two U-shaped lines placed upside down bisected by a vertical line at the centre
16.6C	Three concentric U-shaped lines placed upside down bisected by a vertical line at the centre
16.7C	Two parallel U-shaped sign with a vertical line at the centre and an arrow mark attached on the right arm
16.8C	Base sign 16.0 with another sign at the centre (sig 9.0)
16.9C	Base sign 16.0 with another sign placed to its right (sig 9.0)
16.10C	Base sign 16.0 with another sign to it right (sign 11.0)
16.11C	Sign 16.1 with a sign 11.0 in the middle
16.12C	Base sign 16.0 with another sign at the centre (sign 9.6)
16.13C	Sign 16.1 attached with a horizontal stroke on its top right and sign 11.0 placed in the middle

Sign No.	Description
16.14C	Sign 16.3 superimposed at the centre with sign 11.0
16.15C	Sign 16.1 with sign 11.0 placed to its right
16.16C	Base sign 16.0 with a semi-circular (sign 17.1) projection at the base
16.17C	An inverted concentric U-shaped sin with a V-shaped stroke to its left on the interior
16.18C	A pair of sign 16.1 with a sign 17.0 placed inside
16.19C	Base sign 16.0 with a central vertical line ending with a loop
16.20C	Base sign 16.0 with a vertical stroke at the centre extended below with a small oblique stroke attached to its right at the bottom (sign 37.1)
16.21C	A semicircle with a vertical stroke in the middle and sign 1.0 within a greater than symbol below
16.22C	Sign 16.1 with sign 28.10 flipped horizontally and attached in the middle
16.23C	Sign 16.0 placed with sign 36.3 in the middle
16.24C	Two concentric U-shaped sign (sign 16.0) superimposed with sign 5.0
16.25C	Sign 16.0 with sign 3.0 placed in the middle
16.26C	Sign 16.1 with sign 5.0
16.27C	Sign 16.1 with a pair of sign 2.0 inside it and sign 5.0 to its right
16.28C	Base sign 16.0 with an oblong shape placed at the centre (sign 13.2#)
16.29C	Base sign 16.0 with another sign (sign 1.30)
16.30C	Sign 16.0 having sign 2.1 in the middle
16.31C	Similar to sign 16.0 with an inverted triangle (sign 6.1) placed above
16.32C	Sign 16.1 with sign 17.6 placed inside it
16.33C	Sign 16.0 with sign 19.0 placed inside
16.34C	Double U-shaped sign (sign 16.0) with a triangle I the middle (sign 40.0)
16.35C	A pair of two concentric U-shaped sign (sign 16.0)
16.36C	Base sign 16.0 with a square to its right (sign 22.7)
16.37C	Base sign 16.0 having an X-mark placed below (sign 30.)
16.38C	Sign 16.4 with sign 39.0 above it
16.39C	Sign 16.1 with a vertical line terminated with a six-spoked wheel at the base
16.40C	An inverted U-shaped sign with a horizontal line attached inverted two L-shaped strokes placed in the middle
16.41C	Two concentric U-shaped sign (sign 16.0) with a circle in the middle connected by a vertical line with a horizontal line at the base (sign 38.1C)
16.42C	Base sign 24.0 with an oblique stroke attached at the base of the extreme vertical line and double U-shaped sign (sign 16.0) to its right
16.43C	Double line semicircle 16.1 ending with a rectangle 21.2 on its right arm and with a ladder 23.0 in the middle with an oblique line in it

Sign No.	Description
16.44C	Sign 16.0 with tilted sign 37.9 which is attached with 2.0 in the middle and an arch stroke at its left bottom
16.45C	Three concentric U-shaped lines placed upside down bisected by a vertical line with a V-shaped sign superimposed on it (sign 2.1)
16.46C	Base sign 16.0 with another tow sign. The second sign (sign 1.0) is an Asokan-Brahmi ‘ma’ like sign and the third is a snit-clock wise turned swastika-like sign (sign 33.1)
16.47C	Sign 16.0 with sign 8.4 attached with sign 2.1 in top
16.48C	Base sign 16.0 with another down facing arrow mark sign to its right (sign 13.1)
16.49C	Sign 16.1 with sign 13.0 placed on top
16.50C	Sign 16.0 attached with sign 13.1 facing down
16.51C	Sign 16.0 attached with a left-facing arrow (sign 13.2) at the bottom left
16.52C	Sign 16.1 with an arrow (sign 13.2) attached left top
16.53C	Sign 16.1 with an arrow (sign 13.3) attached right top
16.54C	Sign 16.1 superimposed with sign 11.0
16.55C	Sign 16.1 attached with sign 13.3 on the top right with sign 2.2 attached to its right interior
16.56C	Sign 16.0 with sign 13.16 in the middle
16.57C	Sign 16.0 with an arrow attached left arm and sign 13.16 placed in the middle
16.58C	Sign 16.0 having a down-facing arrow (sign 11.3) and sign 1.2 attached at the base
16.59C	Sign 16.1 place on horizontal line 39.1 and sign 2.1attached with a vertical line
Sign No. 17 Base sign and its variants	
17.0	The top portion of a half-circle
17.1	The bottom portion of a half-circle
17.2	Sign 17.0 turned right
17.3	Sign 17.0 turned left
17.4	The top portion of a semi-circle
17.5	The bottom portion of a semi-circle
17.6	Sign 17.4 turned left
17.7	Sign 17.4 turned right
17.8	Sign 17.0 kept parallel
17.9	Sign 17.1 kept parallel
17.1	Sign 17.4 with the horizontal line extended to right
17.11	Sign 17.7 with the vertical line extended up
17.12	Sign 17.6 with the vertical line extended down
17.13	Sign 17.0 with two horizontal strokes added at both the ends

Sign No.	Description
17.14	A set of seven curved lines like a sound wave
17.15	Half -circle sun like symbol
17.16	Semi-spherical sun like symbol
Sign No. 17 Base in composites	
17.1C	A combination of two half-circles
17.2C	Similar to 17.1C but with two strokes on top of either side
17.3C	A fish-like sign with the body cut across by an extended vertical line
17.4C	Two upward-facing semi-circles placed one above the other making the centre a flower bud
17.5C	Sign 17.1C with sign having a horizontal line with six vertical lines hanging down from the horizontal line
17.6C	Sign 17.3C line and sign 5.0 placed inside sign 15.0 and an additional semi-circle 17.1 added at the bottom
17.7C	A pair of sign 17.4 placed inside one other
17.8C	A triangle (sign 6.0) placed inside a semicircle (sign 17.4)
17.9C	Sign 17.7 attached with an oblique line attached to the right
17.10C	Similar to sign 17.4 with an additional line attached to the bottom left
17.11C	Sign 17.5 with a small circle (sign 19.0) placed at the centre of a horizontal line
17.12C	Sign 17.7 with a small circle (sign 19.0) placed at the centre of a vertical line with an additional stroke in top
17.13C	Sign 17.4 attached with an oblique line with sign 17.9 at its end to the right
17.14C	Base sign 17.5 inverted U-shaped sign 16.1
17.15C	Five vertical lines placed on the sign 17.5
17.16C	Five vertical lines placed on the sign 17.5
17.17C	Five parallel horizontal lines capped with a semicircle 17.7 on its right
17.18C	A vertical line (sign 39.0) with sign 17.7 placed to its right
17.19C	A vertical line attached with a half-circle 17.2 at the centre
17.20C	A parallel vertical line attached with a half-circle 17.3 on the top left
17.21C	A parallel vertical line attached with a half-circle 17.2 on the top right
17.22C	Two parallel vertical lines with half-circles sign 17.2 and 17.3 attached to the exterior
17.23C	Two hemispheres connected with a horizontal line
17.24C	A vertical line attached with two parallel semicircles to its left
17.25C	Similar to sign 17.22C with a horizontal stroke attached at the bottom and an oblique line superimposed on the second sign
17.26C	Two semicircles adjoined

Sign No.	Description
17.27C	Sign 17.5 with sign 4.3 added with an additional pair of oblique lines placed parallelly on the vertical line
17.28C	Sign 17.5 surmounted with an inverted sign 5.13
17.29C	Sign 15.3 surmounted with sign 17.5
17.30C	Double semi-circle with a vertical line to its right attached with semicircle17.2 top right
17.31C	A semicircle attached with a vertical at the top and both covered with another semicircle
17.32C	Base sign 17.0 topped with a horizontal line 39.1 and to the left of it upside down of sign 36.2 with some additional strokes in the middle and bottom
17.33C	Similar to sign 17.7 mounted on a vertical line and two more small vertical strokes at its top and to the left of it sign 2.0 and 30.0
17.34C	Two vertical lines 39.2 surmounted with a semi-circle 17.4 and a square box 22.7 to its right
17.35C	Sign 17.3 with sign 41.0 on the right
17.36C	Sign 17.2with sign 2.0
17.37C	Two overlapping semi-circle sign 17.1 attached with sign 9.0 to its right
17.38C	Similar to sign 17.9 and sign 36.0 attached with bottom
17.39C	Similar to sign 17.4 with infilled crisscross pattern
17.40C	Sign 17.13 with an inverted Y-like sign 36.17 placed to its left
17.41C	A semi-circle with an oblique stroke attached at both ends and sign 17.5 placed above
Sign No. 18 Base sign and its variants	
18.0	Bow and arrow placed facing upwards
18.1	Bow and arrow placed facing downwards
18.2	Bow and arrow placed facing left
18.3	Bow and arrow placed facing right
18.4	Similar to sign 18.0 but with an inverted arrow
18.5	Similar to sign 18.1 but with an inverted arrow
18.6	Similar to sign 18.3 with an inverted arrow
18.7	Bow and arrow placed facing 45° degree down
18.8	Similar to sign 18.0 but with an arrowhead facing upside down and a small oblique stroke
18.9	Similar to the base sign with a spread-out arrowhead
18.1	Similar to sign 18.3 with a triangular bow shape
Sign No. 18 Base in composites	
18.1C	Sign 18.2 with sign 30.0 placed below
18.2C	Two vertical lines connected with a bow

Sign No.	Description
18.3C	Sign 18.0 without arrowhead placed over two sign 39.2
18.4C	Similar to sign 18.9 represented in anthropomorphic form
18.5C	Sign 39.0, 29.0, 27.2 and several strokes within
Sign No. 19 Base sign and its variants	
19	A circle
19.1	A circle with a dot at the centre
19.2	A sun-like sign with partially given rays
19.3	A sun-like sign with rays
19.4	A sun-like sign with rays
19.5	Two concentric circles divided by several strokes
19.6	A sun-like sign
Sign No. 19 Base in composites	
19.1.C	A pair (sign 19.0) of circles
19.2.C	Sign 19.0 in three numbers
19.3.C	Four circles (sign 19.0) in a row
19.4.C	Two concentric circles
19.5.C	Three concentric circles
19.6.C	Sign 39.0 with sign 19.0 placed to its right
19.7.C	A circle bisected by a vertical line 39.0
19.8.C	A circle intersected by sign 30.0
19.9.C	A circle (sign 19.0) superimposed with sign 31.2
19.10.C	A circle (sign 19.0) with eight radiating spokes sign 31.7
19.11.C	Sign 19.4C divided by an extended vertical line (sign 45.0)
19.12.C	Sign 19.4C and the inner circle is topped with sign 2.0 and a vertical line attached in bottom
19.13.C	A downward arrow 13.7 placed inside a circle 19.0
19.14.C	Base sign 19.0 superimposed on the left portion with a plus sign 29.0
19.15.C	Base sign 19.0 with sign 36.17 which is attached with a horizontal line
19.16.C	Base sign 19.0 attached to sign 11.0 and a stroke on the top
19.17.C	A vertical line with a horizontal line in the middle terminated with three vertical strokes hanging down and covered with a circle
19.18.C	A circle having a vertical line originating from the centre and another oblique line with branched-off ends attached at the base of the vertical line
19.19.C	Sign 2.0 superimposed on a circle (sign 19.0)
19.20.C	A right-facing flag-like sign placed inside a circle
19.21.C	Base sign 19.0 within it sign 11.4C

Sign No.	Description
19.22.C	Sign 3.0 placed inside a circle (sign 19.0) and two horizontal lines placed over it
19.23.C	Within the base sign 19.0 a bow and arrow sign and a semi-circle 17.1 below it
19.24.C	A fish-like sign with its tail branched off and the whole sign placed inside a radiating circle 19.4
19.25.C	A circle with rays at the top sign 19.2 and a triangle (sign 6.0) next to it
19.26.C	A circle attached with a pair of sign 5.1 on the top and sign 21.0 placed to its right
19.27.C	Sign 2.0, 39.0,19.0, 19.4 and 29.0
19.28.C	A circular 19.0 with vertical strokes with left-facing small strokes attached to it and sign 1.30 placed to its right
Sign No. 20 Base sign and its variants	
20.0	The circle divided into two halves
20.1	A circle placed with two parallel vertical lines
20.2	A wheel with four spokes as a plus mark
20.3	A wheel with five spokes
20.4	A wheel with five spokes
20.5	A wheel with six spokes as an X-mark and a horizontal line
20.6	A wheel with thirteen spokes
Sign No. 21 Base sign and its variants	
21.0	A rectangular without base line placed vertically
21.1	A rectangular without a top line placed vertically
21.2	A rectangular without a side line placed horizontally
21.3	A rectangular without a top line having a small horizontal stroke attached to the middle of the left vertical line
21.4	Sign 21.1 having a horizontal stroke attached top right arm
21.5	A box-like sign with outturned strokes added at the top.
21.6	A rectangular without a base line having a small horizontal stroke added at the base
21.7	A box-like sign with two horizontal strokes added at the top right arm
21.8	Similar to the base sign 21.0 but with a curvy side
21.9	A rectangular without a base line divided into four equal parts
21.1	A rectangular without base line divided into six equal parts
21.11	A rectangular without a base line divided into nine equal parts
Sign No. 21 Base in composites	
21.1C	Base sign 21.0 in a pair
21.2C	Base sign 21.0 in a pair one within other
21.3C	Sign 39.0 with sign 21.0 placed to its right

Sign No.	Description
21.4C	Sign 39.0 with sign 21.2 to its right
21.5C	Sign 39.0 and sign 21.1
21.6C	A vertical line 39.0 attached with a rectangular box at the middle right
21.7C	Three vertical lines (sign 39.4) with another sign having rectangular without baseline sign 21.0 placed vertically and a small curvature line added to its left arm on its interior
21.8C	Sign 11.0 surmounted with an open-ended rectangle 21.1
21.9C	Sign 6.0 placed inside an open-ended rectangle 211
21.10C	A trapeze placed inside an open-ended rectangle 21.1
21.11C	Sign 3.0 placed inside sign 21.1
21.12C	Sign 2.0 superimposed with a rectangular box 21.1 with an open-top
21.13C	Sign 21.0 placed with sign 2.1 on the horizontal line
21.14C	Sign 21.0 placed above the plus-mark 29.0
21.15C	An open-ended rectangle 21.0 with sign 2.1 superimposed
21.16C	Sign 21.0 with a sign 2.0 placed at the centre
21.17C	A rectangular tank-shaped sign 21.0 with a horse-shoe-shaped sign at the centre
21.18C	An L-shaped sign attached to a sign 21.0
21.19C	Base sign 21.0 superimposed in middle with an upward facing arrow 13.0
21.20C	H-shaped sign placed on a horizontal line
21.21C	Similar to 21.20C but with a vertical stroke at the middle of its horizontal line
21.22C	Right tilted base sign with an inverted L-shape sign intersects at the bottom
21.23C	Tilted base sign 21.0 with an arched sign of 36.17 and a hemisphere within it.
21.24C	Sign 21.1 with a pair of greater and lesser than signs (2.2 and 2.3) attached to it on either sides
21.25C	Sign 21.0 and 22.1
21.26C	Sign 21.1 superimposed with four vertical lines (sign 39.6)
21.27C	Sign 21.2 with a lesser than sign 2.3 on its top
21.28C	Similar to sign 21.2C with two vertical lines facing right 37.9 placed on it
21.29C	Two 21.2 sign with sign 2.2 attached to it on the right and a decorated flag-like sign to its right
21.30C	Sign 39.6 rested on a dish-like sign similar to 21.1
21.31C	Sign 30.0 placed inside a sign 21.0 and letter A-like sign 41.0 placed below
21.32C	Sign 21.2 superimposed with sign 2.0, 30.0 and 39.1
21.33C	Similar to base sign 21.0 with its right line is slightly oblique with a horizontal line in the middle
21.34C	The base sign 21.0, 39.0 and 2.1 placed in order

Sign No.	Description
21.35C	Similar to sign 21.2 but horizontally flipped
21.36C	Sign 21.1 with sign 21.1 capped with a sign 2.0 attached at the bottom right corner
21.37C	An open rectangular box 21.1 with a sign 2.0 covered with a semicircle 17.0
21.38C	Sign 21.5with vertical line attached at the centre
Sign No. 22 Base sign and its variants	
22.0	A rectangular box-like sign placed vertically.
22.1	A rectangular box-like sign placed vertically and divided into two equal parts
22.2	A rectangular box-like sign placed vertically and divided into four equal parts
22.3	A rectangular box-like sign placed horizontally and divided into three equal parts
22.4	A rectangular box-like sign placed vertically and divided into eight equal parts
22.5	A rectangular box divided into 18 parts
22.6	An hour-glass sign placed horizontally
22.7	A square box
22.8	A diamond-shaped sign divided by a vertical line
22.9	A square box-like sign divided into two halves
22.1	A square box divided into four equal parts
22.11	A square box-like sign divided into six parts
22.12	A square box-like sign divided into six equal parts
22.13	A square divided into 12 boxes
22.14	A square box divided into four equal parts with two strokes added on top and bottom and one stroke on the left and right.
22.15	A rectangular box with triangles on all four corners
22.16	Similar to 22.15 but in square shape
Sign No. 22 Base in composites	
22.1C	A rotated rectangle bisected by a vertical line
22.2C	A square box 22.7 divided into two with an extended horizontal line 39.0
22.3C	A rotated rectangular box divided into three parts by two vertical lines (sign 39.2)
22.4C	A rectangular box (sign 22.0) intersected by two parallel vertical lines (sign 39.2)
22.5C	A rectangular box rotated (sign 22.0) with a horizontal stroke to its left
22.6C	A rotated rectangular box with two vertical strokes 39.2 surmounted in the middle
22.7C	Five vertical lines 39.8 placed on a rotated rectangular box
22.8C	A square box 22.7 attached with sign 39.8
22.9C	Sign 22.7 with five lines 39.8 attached to its top and bottom
22.10C	A rectangular box 22.0 placed inside another rectangular box divided by a vertical line 39.0

Sign No.	Description
22.11C	A square box 22.7 having another square box inside
22.12C	Sign 22.7 super imposed with sign 29.2
22.13C	Sign 39.4 placed on a rotated sign 22.0 and attached with sign 2.0 at the bottom left
22.14C	Similar to the sign 22.1 with another sign (sign 37.6) placed to its right
22.15C	Rotated sign 22.1with an arrow attached at the top right corner
22.16C	Sign 22.0 superimposed with sign 39.1 and 37.4
22.17C	Sign 22.1 with a small horizontal stroke on its bottom left and to the right two semi-circles 17.6 and 17.7
22.18C	Sign 22.1 placed on a horizontal line and superimposed with sign 2.1
22.19C	Rectangular box 22.0divided by two horizontal lines with a horizontal line 39.1 placed above
22.20C	A rectangular sign 22.0 superimposed with an eye-like sign having an oblique stroke attached at the bottom
22.21C	A semi-circle 170 placed inside a rotated rectangle (sign 22.0)
22.22C	A tilted square 22.7 with a semi-circle sign 17.2 and 17.3 on the left and right
22.23C	A square box 22.7 diagonally divided into four parts with an X sign 30.0
22.24C	Sign 22.2 with two signs 13.6 of which the leftmost have a hook at ends
22.25C	A square box (sign 22.7) with 2.2
22.26C	Sign 22.10 with the centre vertical line extended beyond the box
22.27C	Sign 31.0 placed inside sign 22.7 and a horizontal stroke attached at the top left and bottom right
22.28C	An I-like sign with a horizontal line 39.1 and in right sign 22.10 its additional horizontal line inside and a plus-mark 29.0 added to its right
22.29C	A rectangular box divided into two halves superimposed with another square box
22.30C	A square divided by two vertical lines with a horizontal stroke placed at the top and bottom. Sign 10.0 placed at the left end and a vertical stroke at the end of the horizontal lines
22.31C	Sign 22.0, 39.0 and 10.0 connected by a horizontal stroke hanging with two vertical lines
22.32C	Sign 22.0 divided into two, sign 3.0 and inverted 21.1 sign on the right
22.33C	Base sign 22.0 topped with sign 2.1 and to the right two horizontal lines connected with one vertical line and the right half of the top horizontal line is attached with several small strokes
22.34C	A square box divided into two and another square box divided into four placed to its right and a sign 28.5 attached to it on its right

Sign No.	Description
22.35C	Four rectangular boxes divided into four. The vertical lines of the first box extended upward and the central horizontal extended and terminated with two downward strokes. The send one had a plus mark on the top. The ends of the central horizontal line of the third and fourth one turned upward and downward. A rectangular box placed between the pairs of the above-said boxes
Sign No. 23 Base sign and its variants	
23.0	A ladder sign
23.1	A ladder (sign 23.0) placed horizontally
23.2	A curved ladder sign placed vertically
23.4	A curved ladder sign placed horizontally
23.5	Two parallel vertical lines connected by two horizontal lines at the middle and an oblique stroke attached on the top of the left vertical line
Sign No. 23 Base in composites	
23.1C	Sign 23.0 and 39.0
23.2C	A ladder (sign 23.0) having a horizontal line surmounted on it
23.3C	Similar to the base sign with an oblique stroke in the center
23.4C	A ladder (sign 23.0) with parallel vertical lines (sign 39.2)
23.5C	Sign 23.1 with two parallel lines in the middle
23.6C	Sign 39.4 and 23.0
23.7C	A ladder (sign 23.0) with three vertical lines placed to its right (sign 39.4)
23.8C	A pair of Base signs 23.0
23.9C	A ladder sign (sign 23.0) placed vertically at the centre and the remaining two on either side lean towards the central ladder.
23.10C	Base sign 23.0 with two diagonal lines (sign 30.0) placed in between parallel lines. Another base sign 23.1 placed on its right in a horizontal position
23.11C	Base sign 23.0 with an Asokan-Brahmi '*ma*' like sign to its right (sign 1.30)
23.12C	Base sign 23.0 with an Asokan-Brahmi '*ma*' like sign to its left (sign 1.30)
23.13C	A ladder (sign 23.0) with another sign (1.0) placed to its right
23.14C	A ladder (sign 23.0) with an X-marked sign (sign 30.0) placed to its right
23.15C	A ladder (sign 23.0) with an X-mark sign (sign 30.0) and inverted Y-like sign (sign 36.0) placed to its right
23.16C	A ladder sign (sign 23.0) with a half-circle
23.17C	Base sign 23.0 with a circle divided into four equal parts placed to its left (sign 40.0)
23.18C	Base sing 23.0 and to the left a right-facing perpendicular topped with a circle
23.19C	A ladder (sign 23.0) with another sign placed to its right (sign 2.0)
23.20C	Sign 23.0 with sign 2.0 placed above
23.21C	A ladder (sign 23.0) with another sign (sign 3.0) to its left

Sign No.	Description
23.22C	A ladder (sign 23.0) with a sign (sign 3.0) placed inside a semicircle (sign 16.1) to its left
23.23C	Base sign 23.0 with an oblique stroke on the top right and a perpendicular line attached to the left
23.24C	Base sign 23.0 with a left turn flag-shaped sign to its left
23.25C	Base sign 23.0 with a Z-shaped sign on its right (sign 37.12)
23.26C	Base sign 23.0 with a U-shaped sign to its left (sign 15.0)
23.27C	A ladder (sign 23.1) placed horizontally with a wavy line (sign 34.1) attached on the top on its extreme right
23.28C	A ladder (sign 23.0) with A pair of signs 6.0 placed to its left
23.29C	A sun-like sign (67.0) with a ladder (sign 23.0)
23.30C	A ladder (sign 23.0) with a fish sign (sign 14.0)
23.31C	A rectangular divided into four boxes with horizontal lines and attached with a sign 21.2 at the bottom left
23.32C	Six parallel horizontal lines intersected two parallel vertical lines at the right extreme end
23.33C	A rectangular box divided into five superimposed with a fish
23.34C	A ladder sign (sign 23.0) with a stylish fish superimposed with sign 17.1C
23.35C	Sign 2.3, tilted sign 1.31 and sign 23.0 placed to its right
23.36C	A ladder (sign 23.0) with a horizontal line with two parallel vertical strokes hanging from both ends (sign 25.0)
23.37C	Sign 23.0 placed over sign 25.1
23.38C	Base sign 23.0 is surmounted by a sign 26.0. At the right and left of the ladder sign a wavy line (sign 34.1) hanging
23.39C	A ladder (sign 23.0) with a square box divided into four equal quadrants (sign 22.2) and another sign (sign 28.5)
23.40C	U-shaped sign with branched-off arms and a horizontal line placed inside. Below this, a fish sign filled with horizontal strokes and sign 23.0 placed to its right
Sign No. 24 Base with its variants	
24.0	Similar to sign 24.0 without the oblique line placed diagonally
24.1	Three vertical lines hanging from a horizontal line
24.2	A horizontal line having three vertical lines attached to it
24.3	Similar to sign 24.2 attached to a vertical line
24.4	Four vertical lines hanging from a horizontal line
24.5	A horizontal line added with four vertical lines facing upward
24.6	Five vertical lines hanging from a horizontal line
24.7	Seven vertical lines hanging from a horizontal line
24.8	Seven vertical lines placed on a horizontal line

Sign No.	Description
24.9	Eight vertical lines are hanging from a horizontal line and the fourth line from left is longer than other lines
24.1	Nine vertical lines placed over a horizontal line
Sign No. 24 Base in composites	
24.1C	Sign 24.1C with extended strokes and a vertical line (sign 39.0) placed to its right
24.2C	Base sign 24.0, 39.0 and 2.0
24.3C	Similar to sign 24.0 with a rectangular divided into five boxes by horizontal lines
24.4C	Sign 24.0 superimposed with parallel oblique lines
24.5C	Base sign 22.0 with a small inverted V-shaped stroke (sign 2.0) added to the extreme left end of the horizontal line
24.6C	Base sign 24.1 superimposed with sign 30.0
24.7C	Base sign 24.0 placed with a vertical line (sign 39.0) and a star-like sign to its right (sign 31.7)
24.8C	A horizontal stroke with three vertical lines hanging from it and the first vertical line extended upward and the base curved towards the interior
24.9C	Sign 24.0 and 24.4
24.10C	One down-facing E-shaped sign with a horizontal line and a V-shaped sign. Below it, a pair of X-shaped sign with oblique lines attached at the extreme right
24.11C	Sign 24.2 with sign 36.2 facing up
24.12C	An upward-facing E-shaped sign (sign 24.2) having an oblique stroke attached at the right top and a sign 2.0 below it
24.13C	Sign 24.4 with a curved attached left top
24.14C	Sign 24.4 with sign 2.0 and 39.0 above it
24.15C	A pair of horizontal lines with short vertical lines hanging from the horizontal line at regular intervals. The upper one has eight vertical lines and the bottom one has six. A vertical line added with four horizontal lines on its right placed to its right
24.16C	A horizontal line with seven vertical lines hanging (sign 24.7) and inverted L-shaped sign superimposed
24.17C	Nine vertical lines placed over a horizontal line with an oblique over it
24.18C	A horizontal line with ten vertical lines placed over it and the extreme left vertical line terminated with a circle
24.19C	A horizontal line hanging with a central vertical line and five short vertical strokes on either side
24.20C	A horizontal line with a central vertical line and five short vertical strokes on either side
Sign No. 25 Base sign and its variants	
25.1	A horizontal line with pair of small strokes facing downward placed on both extreme ends
25.2	Base sign 25.0 placed upside down

Sign No.	Description
25.3	A horizontal line with a pair of small strokes at the one end and a small stroke on another end placed facing downward
25.4	A horizontal line with two pairs of small strokes facing downward placed on both extreme ends
25.5	Similar to sign 25.0 with a vertical line attached on top
25.6	Similar to sign 25.0 with a vertical line attached to the bottom
25.7	Sign 25.1 with a vertical line attached at the bottom
25.8	A horizontal line with a pair of small strokes at the one end and a small stroke on another end placed facing upward and a long vertical line placed at the centre
Sign No. 25 Base sign in composites	
25.1C	T-shaped sign with two vertical strokes and a V-shaped sign placed at both ends
25.2C	Similar to sign 25.0 intersected with a vertical line in the middle (sign 39.0)
25.3C	Similar to sign 20.5 with a rectangular box-like sign placed on the top (sign 21.0)
25.4C	Similar to sign 25.0 having two vertical lines attached at the top middle
25.5C	Similar to 25.6 attached with three horizontal lines (sign 39.5)
25.6C	Sign 25.1C with an oblique stroke in the top vertical line
25.7C	Similar to sign 25.5 but with two strokes extending left from the vertical line
25.8C	Sign 25.1 with two vertical lines 39.2 in the middle
25.9C	Sign 25.0 having a plus mark 29.0 in the middle
25.10C	Base sign 25.0 with another Z-like sign (sign 37.12)
25.11C	Base sign 25.4 with segmented rectangular placed below
25.12C	Sign 25.0 topped on sign 11.0
25.13C	Similar to 25.0 in which the gap between the two parallel vertical lines filled with horizontal strokes at a regular interval looking like a ladder (sign 23.0)
25.14C	Base sign 25.0 placed on another sign (sign 2.0)
25.15C	Base sign 25.0 placed over the triangle (sign 6.0)
25.16C	Base sign 25.0 placed on another sign (sign 7.0)
25.17C	Two parallel vertical lines connected by sign 25.1
25.18C	Sign 25.0 with sign 25.1C placed above it
25.19C	Base sign 25.1 placed upside down and comb-like sign surmounted on a central vertical line (sign 24.19C)
25.20C	Sign 25.5 placed on inverted sign 25.3
25.21C	Similar to base sign 25.0 but with three strokes along with a flower and fish sign to the right
25.22C	A horizontal line hanging with two downward-facing vertical lines at the left end and two upward-facing vertical lines in the middle and an oblique line added at the right end

Sign No.	Description
Sign No. 26 Base sign and its variants	
26.0	A pair of two vertical lines attached with a horizontal line in top
26.1	Two parallel vertical lines hanging from the two parallel horizontal lines at either end
26.2	Two parallel vertical lines hang from the two parallel horizontal lines at either end and a small stroke is placed at the centre of the horizontal line
26.3	Similar to Sign 26.2 but with an additional stroke to its right
26.4	Three parallel vertical lines hanging from a horizontal line at either end
26.5	Two parallel horizontal lines attached with three strokes on either ends
Sign No. 26 Base sign in composites	
26.1C	Three vertical lines connected by parallel horizontal lines
26.2C	Two parallel vertical lines hang from the two parallel horizontal lines at either end and a small trishul-like sign (sign 9.0) placed at the centre of the horizontal line facing up
26.3C	Two parallel vertical lines hanging from the two parallel horizontal lines at either end and a vertical way line (sign 34.1) hanging at the centre topped by sign 9.0
26.4C	Sign 26.1 with a V-shaped sign at the centre placed with two horizontal lines at the top
26.5C	Two sets of parallel horizontal lines connected by two oblique lines at both ends
26.6C	Two parallel vertical lines hang from two parallel horizontal lines at either end. An hour-glass like stroke at the centre
26.7C	Similar to base sign 26.0 but the extreme left line is oblique and to the right of it ‘h’ sign 28.10
26.8C	A rectangular with an open top having a W-shaped sign in the middle and right arm of both signs connected by a horizontal line
26.9C	A vertical line attached with two pairs of horizontal lines to its left and another vertical line placed to its right
Sign No. 27 Base sign and its variants	
27.0	A vertical line added with four horizontal lines on its right
27.1	Two parallel lines attached to a vertical line
27.2	A vertical line added with three horizontal lines on its right
27.3	A vertical line added with five horizontal lines on its left
27.4	A vertical line attached with seven parallel horizontal lines to its right
27.5	A vertical line attached with six parallel horizontal lines to its right
27.6	Six parallel horizontal lines attached to a vertical line on its right
Sign No. 27 Base sign in composites	
27.1C	A vertical line added with three horizontal lines on its right and a vertical line placed to its left (sign 39.0)

Sign No.	Description
27.2C	A vertical line having three horizontal lines attached to its right and the top horizontal line ends with a circle
Sign No. 28 Base sign and its variants	
28.0	A box-like sign without a topmost horizontal line. A vertical line attached at the centre of the horizontal line
28.1	A box-like sign without a bottommost horizontal line. A vertical line attached at the centre of the horizontal line
28.2	Similar to sign 28.0 but facing right
28.3	Similar to sign 28.0 but facing left
28.4	A horizontal line with two small strokes placed at both ends and a vertical line at the centre
28.5	A horizontal line with two small vertical strokes hanging at both ends and a vertical line at the centre
28.6	A vertical line with two small vertical strokes attached to its left at both ends and a horizontal line placed at the centre
28.7	A vertical line with two small vertical strokes attached to its right at both ends and a horizontal line placed at the centre
28.8	A horizontal line with two small strokes hanging at both ends and a vertical line at the centre
28.9	Sign 28.1 having a small horizontal stroke attached to the top left
28.1	A vertical line attached with an L-shaped sign to its right bottom
28.11	A vertical line attached with an L-shaped sign to its left top
28.12	Similar to 28.11 but flipped horizontally and with a horizontal stroke extending
Sign No. 28 Base sign in composites	
28.1C	A sign 2.0 placed inside the sign 28.0
28.2C	Sign 39.0 and sign 28.0
28.3C	Similar to sign 28.3 with an oblique stroke cutting across a horizontal line
28.4C	Sign 28.1 placed with a U-shaped sign 15.0 at the centre
28.5C	Base sign 28.0 with sign 34.1 attached to its bottom
28.6C	Sign 28.2 placed inside sign 21.2
28.7C	Sign 28.4 placed upon horizontal line 39.1
28.8C	Sign 28.5 with sign 2.1 laced above
28.9C	Sign 28.4 with a left oblique on its top and to the left sign 36.2 in upside down and below several oblique strokes
28.10C	Similar to sign 28.7 with a horizontal line in middle
28.11C	Sign 28.4 attached with sign 17.5 in the middle and sign 19.0 in bottom
28.12C	Sign 28.11 with sign 39.3 superimposed
28.13C	Sign 28.10 superimposed with sign 11.0

Sign No.	Description
28.14C	Similar to sign 28.10 but horizontally flipped with a horizontal line attached to its top left
28.15C	Sign 28.2 with a vertical 39.0 line on the right
28.16C	Sign 28.2 with flipped 21.2 attached on left
28.17C	Base sign 28.4 placed upon sign 21.0
28.18C	Sign 28.6 attached with sign 21.2 and sign 30.0
28.19C	Sign 28.4 placed over the sign 21.0 and sign 1.1 on the right
28.20C	Sign 21.1 with sign 28.17C
28.21C	Sign 28.6 attached to sign 25.0 rotated left
28.22C	Sign 28.3 attached to sign 21.2 and it is topped with sign 2.1
28.23C	Sign 28.0 with one vertical stroke and sign 30.0 placed inside it and attached with rotated L-shape sign in base
28.24C	Sign 28.22C with sign 13.6 placed on top middle
28.25C	A leaf sign (sign 35.0) with two human-like sign of which the right made of sign 28.5
28.26C	Sign 28.0 with branched-off arms covered with horizontal and vertical lines
Sign No. 29 Base sign and its variants	
29.0	A plus-mark
29.1	One vertical line divided by two horizontal lines
29.2	One horizontal line divided by two vertical lines
29.3	One vertical line divided by three horizontal lines
29.4	One horizontal line divided by three vertical lines
29.5	One vertical line divided by four horizontal lines
29.6	Four parallel vertical lines bisected by a central horizontal line
29.7	Four parallel vertical lines cut across by a horizontal line in the middle
29.8	Five parallel horizontal lines with a central vertical line
29.9	One horizontal line divided by five vertical lines
29.1	Six parallel horizontal lines cut across by a vertical line
29.11	One horizontal line divided by six vertical lines
29.12	Eight parallel vertical lines cut by a horizontal line
29.13	One vertical line divided by ten horizontal lines
29.14	Ten parallel vertical lines cut across by a horizontal line in the middle
29.15	Two vertical lines divided by two horizontal lines
29.16	Two vertical lines divided by two horizontal lines at the base
29.17	Square box made of intersecting lines
29.18	Three horizontal lines divided by two narrow vertical line

Sign No.	Description
29.19	Two vertical lines divided by four horizontal lines make three boxes
29.2	Three vertical lines divided by two horizontal lines
29.21	Three vertical lines divided by three horizontal lines make four boxes
29.22	Five vertical lines divided by five horizontal lines making sixteen equal parts
29.23	Eleven vertical lines divided by eleven horizontal lines
29.24	Two horizontal and sixteen vertical lines superimposed
Sign No. 29 Base sign and its variantsin composites	
29.1C	Sign 29.0 with an oblique line on the left
29.2C	Similar to Base sign 29.1 diagonally bisected by an oblique line (sign 39.0)
29.3C	Sign 29.2 diagonally bisected by an oblique line
29.4C	Sign 29.2 attached with an oblique attached to right
29.5C	Sign 29.1 placed with an oblique line across
29.6C	Sign 29.1 with an oblique line attached at the bottom and a horizontal stroke on the top-left
29.7C	Sign 29.20 diagonally bisected by a line (sign 39.0)
29.8C	Sign 29.2 attached with sign 29.0 on the top left
29.9C	A plus-mark sign 29.0 with sign 2 2 to its right
29.10C	Sign 29.3 with an oblique line placed across
29.11C	Similar to Base sign 29.3 with another sign (sign 39.4) to its right
29.12C	Similar to Base sign 29.18 with three horizontal lines divided by two vertical lines and placed with a vertical line (sign 39.0) to its right
29.13C	Sign 29.15 and 29.18 placed in order
29.14C	Sign 29.0 placed intersecting a horizontal line 39.1 below and another sign 29.0 placed above it
29.15C	Sign 29.10 with sign 39.2
29.16C	Similar to sign 29.10 but divided by seven horizontal lines and placed with another sign (sign 2.0) to its left
29.17C	Sign 29.2 with sign 3.0 and 2.1
29.18C	Similar to sign 29.1 but long vertical line and sign 15.1 placed to right
29.19C	A crescent symbol with sign 29.15
29.20C	A grid with six boxes placed with a fish above
29.21C	Four parallel vertical lines cut across with fifteen horizontal lines and sign 34.1 attached to it on its right
29.22C	Sign 29.0 attached with an oblique line on the right
Sign No. 30 Base sign and its variants	
30.0	An X-shaped sign

Sign No.	Description
30.1	An X-shaped sign with a vertical stroke attached to the top of the left arm
30.2	An X-shaped sign with an oblique stroke attached to the top of the right arm
30.3	An X-shaped sign with an oblique stroke attached to the top right arm
30.4	Sign 30.0 with an oblique stroke attached bottom of the right oblique line
30.5	Sign 30.0 with an oblique stroke attached to the right arm bottom
30.6	Similar to sign 18.5
30.7	An X-shaped sign with an oblique stroke attached hanging down on the left arm at the top
30.8	An X-shaped sign with an oblique stroke attached to the right arm at the bottom
30.9	An X-shaped sign with an oblique stroke attached to left arm at the bottom
30.1	An X-shaped sign with an oblique stroke attached to the right arm hanging below
30.11	Sign 30.0 with an oblique stroke attached at the top of the right oblique line
30.12	An X-shaped sign with oblique strokes attached hanging down on both the arms at the top
30.13	Sign 30.0 attached with two oblige strokes like a flag on the top of the left oblique line
30.14	Sign 30.0 attached with two oblique strokes at the bottom left
30.15	An X-shaped sign with a small stroke added at the top of its right arm
30.16	An X-shaped sign with a horizontal line added on its right arm both at the top and bottom
30.17	An X-shaped sign with four horizontal strokes attached to the arms
30.18	Sign 30.0 with oblique strokes attached at the bottom and in the middle of the left arm
30.19	Sign 30.0 capped with an arrow on its right arm
30.2	An X-shaped sign with superimposition
Sign No. 30 Base sign in composites	
30.1C	An X-shaped sign with a vertical line to its right (sign 39.0)
30.2C	An X-shaped sign with a vertical line to its left (sign 39.0)
30.3C	Sign 30.0 with a horizontal line 39.1
30.4C	An X-shaped sign with two vertical lines to its left (sign 39.2)
30.5C	An X-shaped sign with two vertical lines to its right (sign 39.2)
30.6C	An X-shaped sign (sign 30.0) superimposed on two parallel vertical lines (sign 39.2)
30.7C	An X-shaped sign with two parallel horizontal lines placed at the top (sign 39.3)
30.8C	An X-shaped sign with a vertical line placed on either side (sign 39.0)
30.9C	Sign 30.0 with sign 13.0 cut across by two parallel horizontal lines 39.1
30.10C	An X-shaped sign (sign 30.0) in which one oblique line shown with parallel lines

Sign No.	Description
30.11C	An X-shaped sign attached with a vertical line (sign 39.0) based with a horizontal line (sign 39.1)
30.12C	Base sign 30.0 with sign 39.0 to the right and 39.1 at top
30.13C	Sign 39.2, 30.0, 39.2 and sign 2.3 attached one at the top right and another at the bottom right of the extreme vertical line
30.14C	Sign 39.2, 30.0, 39.0 and 32.0
30.15C	Sign 39.2, 30.0, 39.0 and 34.5 superimposed with a horizontal line
30.16C	Sign 30.8 with sign 39.2 and 34.20
30.17C	Sign 30.0 with sign 23.1 and a horizontal line 39.1 intersecting it
30.18C	Sign 30.0 with sign 39.0 and a pair of 30.0 sign to the right
30.19C	Sign 30.0 with horizontal lines 39.1 on the top and bottom with two vertical lines (sign 39.2) to its right
30.20C	An X and plus-mark shaped sign given one below the other
30.21C	Sign 30.0 having sign 2.30 on the right arm top
30.22C	Sign 30.0 attached with sign 2.12 on top left with an oblique stroke on the bottom left
30.23C	Sign 30.0 attached with a sign 34.1 to its top left and sign 36.0 placed to its right
30.24C	A X-shaped sign with an inverted V-shaped sign (sign 2.0) placed to its left
30.25C	An X-shaped sign with an inverted V-shaped sign (sign 2.0) placed to its right
30.26C	An X-shaped sign with a V-shaped sign to its right (sign 2.1)
30.27C	An X-shaped sign with a V-shaped sign attached to the top right arm (sign 2.1)
30.28C	Sign 30.0 superimposed with sign 2.0 and sign 39.0 placed to its right.
30.29C	An X-mark placed between two vertical lines and a wavy line attached at the base and sign 2.0 placed to its right
30.30C	Multiple signs 30.0, 19.0, 1.2, 39.0 and the remaining two signs unidentified
30.31C	An X-shaped sign (sign 30.0), a vertical line attached with an oblique stroke at the top to its left (sign 37.2), Two oblique lines meet at the top (sign 2.0) and a vertical line branched off on either side at the top from the middle (sign 9.0)
30.32C	Sign 39.0, sign 30.0 with a central arrow 13.9 and a flag-like sign 37.19
30.33C	An X-shaped sign with an inverted Y-shaped sign to its right (sign 36.0)
30.34C	An X-shaped sign with sign 36.0 placed at the bottom
30.35C	Sign 30.0 superimposed with inverted 36.6
30.36C	Sign 30.0 superimposed with sign 36.4
30.37C	Sign 30.0 intersected in the top right with sign 17.11 and in the top left by sign 39.0
30.38C	Sign 30.0 attached with a sign 4.0 on the right arm top
30.39C	Sign 30.0 with sign 9.0 above it

Sign No.	Description
30.40C	Sign 10.0 attached to sign 30.0
30.41C	An X-shaped sign with an arrow attached at the bottom of the left arm
30.42C	An X-shaped sign in a pair placed one below the other adjoined
30.43C	An X-shaped sign in a pair
30.44C	An X-shaped sign in a pair placed right
30.45C	An X-shaped sign 30.7 with a horizontal line at the base (sign 39.1)
30.46C	Base sign 30.0 repeated thrice overlapping one-another
30.47C	An X-shaped sign with a vertical line having an oblique stroke attached at the bottom placed to its left (sign 37.3)
30.48C	Sign 30.0 placed with sign 28.10 on the right
30.49C	Sign 30.0 superimposed with sign 25.0
30.50C	Sign 30.0 with sign 21.2
30.51C	Sign 30.0 superimposed a sign 19.0
30.52C	Sign 30.0 attached to the left of sign 9.0 and further left pair of sign 39.0 of which the leftmost is cut by an oblique line
30.53C	Base sign 30.0 and 17.7 placed inside a semi-circle
30.54C	Sign 30.0 with an oblique stroke attached to the right arm top and sign 39.2 placed to its right
30.55C	An X-shaped sign with an oblique stroke attached to its top-left arm with a vertical line to its left (sign 39.0)
30.56C	An X-shaped sign with an oblique stroke attached to its left arm top with a vertical line to its right (sign 39.0)
30.57C	An X-shaped sign with two oblique strokes attached at the top and right facing e-shaped sign placed above
30.58C	Base sign 30.0 placed with an oblique stroke at the bottom of the right arm and a vertical line (sign 39.0) placed to its left
30.59C	Sign 30.0 with oblique strokes attached on either side top with a vertical line (sign 39.0) next to it
30.60C	Sign 30.0 with oblique lines attached on top in both ends and an oblique stroke added on the extreme right oblique line
30.61C	A cross or X-shaped sign with oblique strokes attached hanging down on both the arms at the top and an upturned attached to it on the inner side of the oblique line
30.62C	Similar to sign 30.12 with another sign (sign 2.0) to its right
30.63C	An X-shaped sign in a pair placed one above other
30.64C	Sign 30.12 with sign 22.0 placed to its right
30.65C	One of the oblique lines of an X-shaped sign (sign 30.0) terminated with circles 19.0 and a downward arrow 13.1 placed to its left
30.66C	Sign 30.8 and to the right sign 30.3 with a stroke extending down from its centre

Sign No.	Description
30.67C	Sign 30.0 with sign 39.0 to its right and sign 2.3 at the bottom with an oblique stroke cutting across
30.68C	An X-shaped sign with a horizontal stroke added to the right top and a sign 2.0 with a horizontal line surmounted and two small oblique strokes added at the bottom left
30.69C	Sign 30.7 to the left sign 37.14 and further left sign 39.0
30.70C	Similar to sign 30.7 with four strokes extending from the top right and sign 29.2 attached to the bottom left and then to the left sign 36.3
Sign No. 31 Base sign and its variants	
31.0	A cross mark superimposed with a vertical line at the centre
31.1	A cross mark superimposed with a horizontal line at the centre
31.2	A plus mark superimposed with a diagonal line
31.3	A cross mark superimposed with a vertical line at the centre and an oblique stroke added at the top of the vertical line to its right
31.4	A cross mark superimposed with a vertical line at the centre and an oblique stroke added at the base of the diagonal line to its right
31.5	A cross mark superimposed with T-like mark or a plus mark in which the upper half of the vertical line missing
31.6	Sign 31.1 attached with an oblique stroke at the bottom
31.7	A cross mark superimposed with a plus mark
31.8	A cross mark superimposed with a plus mark and an oblique stroke added at the top of the vertical line
31.9	Sign 31.7 placed with a horizontal stroke between two spokes
31.1	Base sign 31.2 with two parallel oblique strokes attached
31.11	A cross mark superimposed with a plus mark with three strokes added on the left of the vertical line
31.12	A cross mark superimposed with a plus mark with three strokes added at the top of the right diagonal line
31.13	Sign 31.1 with oblique strokes at the top and a central horizontal line is connected with the right bottom oblique line by a stroke
31.14	Two cross marks superimposed with a plus mark
Sign No. 31 Base sign in composites	
31.1C	The base sign 31.0 added with a vertical line (sign 39.0) to its right
31.2C	Sign 39.0 and 31.0 placed in order
31.3C	The sign 31.1 added with a vertical line (sign 39.0) to its right
31.4C	Sign 31.1 placed between vertical lines (sign 39.0)
31.5C	Similar to sign 31.5 but inverted with two parallel vertical lines placed to its right connected by a horizontal line

Sign No.	Description
31.6C	The sign 31.1 added with a cross mark (sign 30.0) and two vertical line (sign 39.2) to its right
31.7C	The sign 31.1 with Asokan-Brahmi '*ma*' like sign added to its right (sign 1.0)
31.8C	The 31.7 with additional Asokan-Brahmi '*ma*' like sign added to its left (sign 1.0)
31.9C	Sign 31.7 and 1.0
31.10C	Sign 31.0 and A pair of signs 3.0 to its right
31.11C	The sign 31.1 added with A pair of signs 3.0 to its right
31.12C	The sign 31.1 added with a cross mark (sign 30.0) to its right
31.13C	The base sign 31.7 added with a sign 21.0 to its right
31.14C	Sign 31.3 superimposed with a stroke at the left bottom and sign 2.1 to its right
31.15C	The base sign 31.7 added with an arrow mark facing up to its left (sign 13.0)
31.16C	Base sign 31.7 with a downward-facing arrow 13.1
31.17C	Sign 31.0 and a right-turned arrow placed to its right
Sign No. 32 Base sign and its variants	
32.0	An hour-glass or *udukkai*-like sign
32.1	An hour-glass or *udukkai*-like sign placed horizontally
32.2	An hour-glass or *udukkai*-like sign with a small oblique stroke added on its left
32.3	An hour-glass or *udukkai*-like sign with a small oblique stroke added on its right
32.4	An hour-glass or *udukkai* like sign with a small horizontal stroke added on its left at the top
32.5	An hour-glass or *udukkai*-like sign with a small horizontal stroke added on its right at the bottom
32.6	Sign 32.1 having a small stroke on the right top
32.7	Sign 32.1 with an additional stroke at the bottom right
32.8	Sign 32.0 with oblique strokes attached at the right top and base
32.9	An hour-glass or *udukkai*-like sign with covered with curved lines placed horizontally
32.1	An hour-glass or *udukkai*-like sign filled with vertical lines placed horizontally
Sign No. 32 Base sign in composites	
32.1C	An hour-glass or *udukkai*-like sign placed horizontally with a vertical line (sign 39.0) added to its right
32.2C	An hour-glass or *udukkai* like sign placed horizntally intersected by a vertical line (sign 39.0) at the centre
32.3C	Sign 32.0 with a vertical line 39.0 attached on the right
32.4C	Sign 32.1 with a horizontal line 39.1 at the centre
32.5C	A pair of signs 32.1

Sign No.	Description
32.6C	An hour-glass or *udukkai*-like sign with a horizontal line at the centre with two vertical lines placed at both ends facing up
32.7C	Sign 32.0 placed above the horizontal line terminated with vertical lines
32.8C	Sign 32.0 with sign 30.0 superimposed
32.9C	An hour-glass or *udukkai*-like sign with a pair of other signs (sign 2.0)
32.10C	Sign 32.0 and W-shaped sign made with pair of sign 2.1
32.11C	Sign 32.1 along with a Star sign to its right
32.12C	An hour-glass or *udukkai*-like sign with two horizontal lines added on either side
32.13C	Hourglass in landscape with infilled vertical strokes and at the middle cuts one vertical line
32.14C	Similar to sign 32.10 but rotated with two parallel oblique strokes attached on either side
32.15C	Similar to sign 32.14C but placed upside-down having two oblique strokes on either side
32.16C	An hourglass or *udukkai*-like sign divided by four horizontal lines with two small oblique strokes added at the top on either side
32.17C	An hour-glass or *udukkai*-like sign divided by four horizontal lines with two small oblique strokes added at the bottom on either side.
32.18C	Similar to sign 32.16C but having three oblique strokes attached on its left
32.19C	An hour-glass or *udukkai*-like sign divided by horizontal lines with a greater than sign placed on either side at the centre (sign 2.2)
32.20C	An hour-glass sign filled with horizontal lines and two vertical lines 39.2 placed on either side
Sign No. 33 Base sign and its variants	
33.0	A plus mark added with a small stroke at its end but placed in a clockwise direction
33.1	A plus mark added with a small stroke at its end but placed in an anti-clockwise direction
33.2	A plus mark added with a small stroke at its end placed both in a clockwise and anti-clockwise direction
33.3	A plus mark added with a small stroke at its end two on the opposite and two on each sides
33.4	A plus mark having the oblique strokes placed opposite to each other
33.5	Similar to sign 33.4 with arms facing the opposite
33.6	A plus mark with two and two vertical strokes attached to its four arms
33.7	A partially drawn swastika-like sign
33.8	A plus mark added with two small strokes at its end but placed in a clockwise direction
33.9	A plus mark added with two small strokes at its end but placed in an anti-clockwise direction

Sign No.	Description
33.1	A plus mark added with two small strokes at its end but placed in both an anti-clockwise and clockwise directions
33.11	A plus mark added with two small strokes at its end but placed in both an anti-clockwise and clockwise directions
33.12	Similar to sign 33.8 but horizontal stroke made facing each other
33.13	Similar to sign 33.12 but the horizontal strokes are made facing each other on opposite sides
33.14	A plus mark added with three small strokes at its end but placed in an anti-clockwise direction
33.15	A plus mark added with four small strokes at its end but placed in a clockwise direction
33.16	Two parallel vertical lines attached with two horizontal strokes facing left cut across by two parallel horizontal lines attached with two vertical strokes hanging resulting in a plus-mark
33.17	Similar to sign 33.16 but having double lines
Sign No. 33 Base sign in com[osites	
33.1C	A base sign of clockwise hands (sign 33.0) and an anti-clockwise sign to its left (sign 33.1)
33.2C	Base sign 31.1 with another sign (sign 1.0) to its right
33.3C	Base sign 33.1 with another sign (sign 1.0) to its left
33.4C	Sign 33.1 with another sign (sign 1.4) to its right
33.5C	Base sign 33.1 with two vertical lines (sign 45.1) to its left
33.6C	Bae sign 33.0 placed with ladder sign (sign 12.0) to its left
33.7C	Base sign 33.0 with sign 18.6 but flipped horizontally
33.8C	Similar to sign 33.4
33.9C	A clock-wise turned swastika-like sign superimposed with greater than symbol 2.3
33.10C	Sign 33.2 and sign 2.0 having an oblique line attached at the left bottom and superimposed with sign 34.1
33.11C	Sign 33.3 with sign 7.4C to its right but the latter is tilted left
33.12C	Sign 33.2 flipped horizontally and to its top right sign 7.4C in an almost upside-down position
33.13C	A vertical line attached with an L-shaped sign at the bottom left and sign 33.4 in the middle and sign parallel Z-shaped sign attached with a sign 13.0 placed to its right
33.14C	Similar to sign 33.14 with a wavy line (sign 34.1) attached to its top-left opening.
33.15C	Sign 33.7 with a wavy line (sign 34..1)
Sign No. 34 Base sign and its variants	
34.0	A wavy line placed horizontally

Sign No.	Description
34.1	A wavy line placed vertically
34.2	A staircase-like sign
34.3	A wavy sign placed horizontally above a horizontal line
34.4	A wavy sign placed horizontally below a horizontal line
34.5	A wavy sign vertically attached to a vertical line on its right
34.6	A wavy sign vertically attached to a vertical line on its left
Sign No. 34 Base sign in composites	
34.1C	A pair of wavy lines placed one below the other (sign 34.0)
34.2C	Two parallel vertical wavy lines (sign 34.1)
34.3C	A pair base sign 34.0 of wavy lines placed parallel
34.4C	A pair of signs 34.0 superimposed
34.5C	A wavy sign 34.1 placed vertically intersected by a vertical line (sign 39.0)
34.6C	A wavy sign 34.0 placed horizontally intersected by a horizontal line (sign 39.0)
34.7C	A wavy sign 34.1 placed vertically and another sign (sign 39.0) placed to its right
34.8C	Sign 39.0 with sign 34.1 to its right
34.9C	A wavy sign (sign 34.1) with a horizontal 39.1 stroke
34.10C	A wavy base sign 34.3 placed above horizontal line (sign 39.1)
34.11C	A wavy sign 34.5 placed vertically attached to a vertical line (sign 39.0) on its right and another vertical line placed to its left (sign 39.0)
34.12C	A wavy sign 34.1# placed vertically attached to a vertical line (sign 39.0) on its left and another wavy line placed vertically attached to a vertical line (sign 39.0) on its right
34.13C	A wavy sign 34.1# placed vertically attached to a vertical line (sign 39.0) on its right and another vertical line placed to its right (sign 39.0)
34.14C	A wavy base sign 34.0 placed parallel to a horizontal line placed below it (39.1)
34.15C	A wavy base sign 34.0 superimposed on the bottom one of the two horizontal lines (sign 39.3)
34.16C	Sign 39.2 with sign 34.1 on the right vertical line
34.17C	Sign 39.2 with sign 34.1 on the left vertical line
34.18C	Sign 39.2 with sign 34.5 on right
34.19C	Sign 39.2 with sign 34.6 on left
34.20C	A wavy sign 34.1 placed between two parallel vertical lines (sign 39.2)
34.21C	Two wavy sign 34.1 placed between two parallel vertical lines (sign 39.2)
34.22C	A pair of signs 34.1# lines placed intersected by vertical lines (39.2)
34.23C	Sign 39.3 superimposed with A pair of signs 34.0
34.24C	Sign 34.5C with sign 39.2 to its right

Sign No.	Description
34.25C	Sign 34.20C with sign 39.0 on its left
34.26C	Three sign 34.5C
34.27C	Sign 34.20C with sign 34.5C placed right
34.28C	Sign 34.6 with sign 34.20C
34.29C	Sign 39.2 with sign 34.16C on right
34.30C	Sign 34.1 with sign 39.6 placed in right
34.31C	Sign 39.2 with sign 34.20C
34.32C	A pair of wavy lines sign 34.1 both intersected with sign 39.1
34.33C	Sign 39.4 superimposed with A pair of signs 34.1
34.34C	Sign 34.6 with sign 39.0 and 34.5 placed right
34.35C	Sign 34.6 with sign 39.0, 34.20C and sign 39.0 placed in order
34.36C	Sign 34.6, 34.5 and 39.0 placed to the right
34.37C	A wavy line (34.0) placed between two parallel vertical lines 39.0
34.38C	A pair of wavy lines (34.0) placed one above the other between two parallel vertical lines 39.0
34.39C	A wavy line 34.1 placed vertically with a vertical line to its right (sign 39.0) and V-shaped sign placed upside down to its left top (sign 2.1)
34.40C	A sign 34.1 superimposed on one of the two vertical lines (sign 39.2) and another sign 2.0 to its right
34.41C	A wavy sign 34.1 placed vertically intersecting the vertical line (39.0) and another sign (sign 2.0) placed to its right
34.42C	Sign 34.0 to the left of it sign 2.0 and 39.0
34.43C	Sign 34.6 and sign 2.0 superimposed with a wavy line 34.1 on its right oblique line
34.44C	A wavy line (sign 34.0) placed to the left of sign 2.0 having an oblique stroke attached at the top and a V-shaped stroke 2.2 placed at the middle of the right oblique line
34.45C	A wavy sign 34.1 placed vertically and another sign (sign 1.0) placed to its right
34.46C	Sign 34.20C and the sign nos. 1.0 and 2.0 placed to its right
34.47C	A base sign 34.0 wavy line placed horizontally and a three-pronged fork-like sign (sign 3.0) placed to its left
34.48C	A vertical line attached with a wavy line to its right and base sign 3.0 attached with a rectangular box to its right
34.49C	Base sign 34.1, 3.0 and 11.0 placed in order
34.50C	Sign 39.0, sign 34.1, sign 11.0 with two horizontal strokes attached top right and sign 1.30 placed in an order
34.51C	Sign 34.5C to the right sign 11.0 and sign 13.1 with two strokes to its left
34.52C	Sign 34.6 with sign 27.0

Sign No.	Description
34.53C	Sign 34.5 with sign 27.2 and one unidentified sign
34.54C	A sign 34.1 placed vertically and a small vertical stroke with a box next to it. The three-pronged fork-like sign placed upside down (sign 4.0) and a comb-like sign placed to its right (sign 24.2)
34.55C	A wavy line (sign 34.0) attached to an upward-facing arrow mark (sign 13.0)
34.56C	Pair of sign 34.0 with an arrow attached at the right end of the top wavy line
34.57C	Sign 34.1 and sign 36.0 placed next to it
34.58C	A wavy line (sign 34.1) hanging from a horizontal line placed at the top of the vertical line
34.59C	Sign 34.1 and inverted sign 15.1
34.60C	A V-shaped sign mounted with a horizontal line hanging with two parallel vertical lines with a wavy line is placed between them at both ends.
Sign No. 35 Base sign and its variants	
35.0	A leaf-like sign with the leaves shown facing up
35.1	A leaf-like sign with the leaves shown facing down
35.2	A leaf-like sign facing right
35.3	A leaf-like sign with three leaves shown facing up
35.4	A leaf-like sign with four leaves shown facing down
35.5	. A left-like sign with two leaves
35.6	A vertical line attached with an oblique stroke on either side
35.7	A vertical line having two horizontal strokes to its right at the top
35.8	Sign 35.0 surmounted with sign 13.16
35.9	A leaf-like sign
35.1	Sign 35.9 placed horizontally
35.11	Stylized leaf-like sign
35.12	Single-stranded leaf pointing down
35.13	Single-stranded leaf pointing up
35.14	A leaf-like sign shown in half
35.15	A vertical line having three horizontal strokes on its left and four on its right
35.16	A flower sign (sign 35.1) placed with a loop at the top
35.17	A tree-like sign
35.18	Right-facing four arrow marks placed on a horizontal line
Sign No. 35 Base sign in composites	
35.1C	A pair of leaf-like sign with the first sign shown in half
35.2C	A leaf-like sign with two vertical lines to its right (sign 39.2)
35.3C	Sign 35.1 with a plus-mark 39.0 to its right

Sign No.	Description
35.4C	Sign 35.0 superimposed with sign 18.0
35.5C	Sign 35.12 with sign 39.2 and 36.0
35.6C	A flower sign (sign 35.1) with a vertical line (sign 39.0) to its right and both attached with another curved line
35.7C	Sign 35.1 attached to a sign 24.6 having a wavy line (sign 34.0) attached above the horizontal line
35.8C	A vertical line intersected by horizontal lines and a T-shaped sign placed over a comp-like sign
35.9C	A leaf 35.0 with an unidentified sign
35.10C	A leaf-like sign 35.0 with sign (sign 4.0) to its left
35.11C	A leaf-like sign 35.1 with a circle on the top (sign 19.0) and another sign (sign 3.0) placed horizontally to its left
35.12C	Sign 35.1 with sign 5.0 to the right
35.13C	A triangle sign 6.0 surmounted with a leaf sign 35.0
35.14C	Sign 35.2 attached with sign 6.3
35.15C	Sign 35.1 topped with sign 21.0 and to the right sign 15.1
35.16C	A leaf-like sign with a curved line attached at the base
35.17C	A flower-like sign with grab like sign to its right
35.18C	Double-lined branch with hook-like strokes
Sign No. 36 Base sign and its variants	
36.0	The inverted Y-like sign. One long oblique line attached with a small oblique line stroke on its right at the bottom
36.1	The inverted Y-like sign placed horizontally.
36.2	Sign 36.0 inverted upside down
36.3	Sign 36.0 flipped horizontally
36.4	Similar to sign 36.0 rotated right
36.5	Sign 36.4 flipped vertically
36.6	Sign 36.4 flipped horizontally
36.7	Sign 36.0 with horizontal stroke attached on the right
36.8	Sign 36.1 with horizontal stroke attached left
36.9	Sign 36.0 attached with an oblique stroke attached on its left
36.1	Sign 36.0 attached with an oblique stroke to the left arm interior
36.11	Similar to sign 36.2 with an additional stroke to its top extending upwards
36.12	Sign 36.0 with a horizontal line attached at the top and an oblique stroke attached in the interior of the right oblique line
36.13	Similar to 36.2 an oblique stroke attached to its bottom right
36.14	Similar to sign 36.3 with an oblique stroke attached on the bottom

Sign No.	Description
36.15	Similar to sign 36.0 but with an arch to its right instead of an oblique line
36.16	Similar to sign 36.1 but with an arch to its left instead of an oblique line
36.17	Inverted Y-sign
36.18	Sign 36.17 with an oblique line on top
36.19	A human-like sign
36.2	Two vertical lines branched off with two oblique lines in the middle
36.21	Sign 36.1 attached with two parallel horizontal strokes on the top left
36.22	Similar to sign 36.15 rotated right
36.23	Similar to 36.3 but angled stroke
Sign No. 36 Base sign in composites	
36.1C	Sign 36.1 with sign 36.2
36.2C	Sign 36.1 with 36.0
36.2C	A pair of signs 36.0 The second one had a wavy attached at the top
36.3C	Sign 36.0 placed on 36.4
36.4C	Combination of signs 36.0, 36.1 and 39.0
36.5C	Sign 36.0 with sign 39.0 to the right
36.6C	Sign 36.0 with sign 39.0 to the left
36.7C	Sign 36.1 with 39.0 to the left
36.8C	Sign 36.1 placed above the horizontal line 39.1
36.9C	Sign 36.0 placed between sign 39.0
36.10C	Sign 36.2 placed on sign 39.1
36.11C	Sign 36.1 with a horizontal line attached to the top left and from there, a line is attached to the bottom left oblique line
36.12C	Sign 36.0 with a hook at top right a horizontal line extending left also at top
36.13C	Sign 36.1 with an oblique line cutting in the middle and a small stroke to the right
36.14C	Sign 36.3 placed on sign 39.1
36.15C	Sign 36.1 with an upward arch from the middle on the right and an oblique stroke to the top left
36.16C	Sign 36.0 with an extended semi-circle attached to the top right with some small strokes in the right
36.17C	Sign 36.2 with sign 17.2 attached to the right
36.18C	Sign 36.1 superimposed on top with sign 21.2
36.19C	Similar to sign 36.0 with a horizontal stroke added at the top with a sign 21.1 below
36.20C	Sign 36.0 with sign 2.1 attached at the top
36.21C	Sign 36.0 with sign 2.0 placed to the right

Sign No.	Description
36.22C	Sign 36.1 with sign 2.0
36.23C	Sign 36.0 with sign 2.2 placed on the right oblique line
36.24C	Sign 36.3 superimposed with sign 2.0
36.25C	Sign 36.1 and A pair of signs 2.0 placed to its right
36.26C	Sign 36.1 with A pair of signs 2.3 in left and a horizontal stroke in the top left
36.27C	Sign 36.0, 2.0 and 2.1
36.28C	Base sign 36.1, 41.0 and 2.0
36.29C	The inverted Y-like sign 36.1 with an A-like sign (sign 41.0) to its left
36.30C	The inverted Y-like sign 36.0 and another similar sign below it
36.31C	Sign 36.0 with sign 34.1 and an oblique line attached to it
36.32C	The sign (sign 36.0) with a plus mark 29.0 attached with oblique strokes placed to its right
36.33C	Sign 36.0 with an anti-clockwise turned spiral attached top right
36.34C	Sign 36.0 on the right and to its left small square topped with a plus sign on the top right corner
36.35C	Step-like sign attached to an inverted L-shaped sign and sign 36.1 placed to its right
36.36C	A Flag-like sign placed to the left of a vertical line attached with an oblique stroke and horizontal stroke
36.37C	Sign 36.3 with a horizontal stroke to its left and two horizontal strokes to its right
36.38C	Base sign 36.0, 3.0 and a T-shaped sign
36.39C	Sign 36.3and eight horizontal lines intersected by a vertical line in the middle
36.40C	Sign 36.0 with half circles to its right and left facing U-shaped sign to its left
36.41C	Sign 36.3 and A pair of signs 11.0 placed to its right
36.42C	Base sign 36.0 surmounted with sign 10.0
36.43C	36.17 attched with a horizontal line in the middle
36.44C	Sign 36.17 with horizontal lines added at the top and middle
36.45C	A pair of Y-shaped sign
36.46C	Sign 36.17 and 11.0
36.47C	Sign 36.17 topped with a horizontal stroke on top and to the right sign 2.1
36.48C	A vertical line attached with two oblique strokes at the bottom and an oblique stroke at the top right and a horizontal line in the middle
36.49C	Three identical signs 10.6 joining together
36.50C	Sign 36.17 placed with four horizontal lines and an L-shaped sign with three horizontal lines at the top and sign 5.14 sign 8.5 faces right and left
Sign No. 37 Base sign and its variants	
37.0	A vertical line attached with an oblique stroke at the top to its right

Sign No.	Description
37.1	A vertical line attached with an oblique stroke at the bottom to its right
37.2	A vertical line attached with an oblique stroke at the top to its left
37.3	A vertical line attached with an oblique stroke at the bottom to its left
37.4	A horizontal line with an oblique stroke attached at the left end bottom
37.5	A horizontal line with an oblique stroke attached at the left end top
37.6	A vertical line attached with an oblique stroke both at the top left and bottom right
37.7	A horizontal line attached with an oblique stroke both at the right top and left bottom
37.8	Z-like sign
37.9	A vertical line having a horizontal stroke at the top right
37.1	A vertical line having a horizontal stroke at the top left
37.11	A vertical line added with a horizontal stroke on its top right and bottom left
37.12	A vertical line added with a horizontal stroke on its top left and bottom right
37.13	A vertical line added with an oblique stroke on its top left and bottom right
37.14	A vertical line attached with two horizontal strokes at the top right
37.15	A vertical line attached with two horizontal strokes at the top left
37.16	A vertical line attached with parallel horizontal strokes at the base right
37.17	A vertical line added with two horizontal strokes on its top right and bottom left
37.18	A vertical line added with two horizontal strokes on its top left and bottom right
37.19	A vertical line attached with three horizontal strokes at the top right
37.2	A vertical line attached with three horizontal strokes at the bottom left
37.21	Similar to sign 37.18 with three horizontal strokes
37.22	A vertical line attached with a triangle on the top left
37.23	A vertical line attached with a triangle at the bottom right
37.24	A vertical line attached with a triangle at the top left and a horizontal stroke placed below
37.25	A triangle attached at the base of a vertical line
37.26	Two triangles one at the top facing right and another at the bottom facing left attached to a vertical line
37.27	A vertical line attached with a triangle attached at the top and bottom
Sign No. 37 Base sign in composites	
37.1C	Two parallel curved vertical lines with an oblique stroke added to its left
37.2C	Sign 37.0 placed with two horizontal strokes
37.3C	A T-shaped sign with an oblique stroke attached to its left
37.4C	Sign 37.3 with another sign (39.0) having a horizontal stroke attached to its left at the top

Sign No.	Description
37.5C	Sign 37.7 and 37.4 placed horizontally
37.6C	Sign 37.2 and sign 39.0
37.7C	Sign 37.0 with one small stroke at the top and a horizontal line at the bottom
37.8C	Sign 37.3 attached to two horizontal lines at the top
37.9C	Sign 37.1, 37.6 and sign 37.2
37.10C	Sign 2.1 attached with a sign 37.0 on its left
37.11C	Sign 37.12 with sign 39.1 to the right
37.12C	Base sign 37.12 placed with another sign (sign 1.30) to its left
37.13C	Base sign 39.11 placed with another sign (sign 13.20) to its right
37.14C	Sign 37.13 attached with sign 13.22 in its mid-right
37.15C	Sign 37.12 with A pair of signs 1.0
37.16C	Sign 37.11 tilted and added with square box on the vertical line on its left
37.17C	Sign 37.15 with additional two horizontal strokes added to its left at the bottom
37.18C	Sign 37.19 flipped horizontally to two consecutive 2.0 sign at the bottom
37.19C	Similar to 37.19 but flipped and in top sign 2.3 and to the right sign 37.9
37.20C	A left turn flag-like sign with a Tamil ‘ma’ like sign placed on the stem
37.21C	A horizontal line with two vertical strokes hanging placed above a curved line
37.22C	A vertical line with two horizontal lines attached at the top right and a vertical line placed to its right
37.23C	A flag-shaped sign 37.15 with a sign 2.0 to its right
37.24C	A vertical line with three parallel horizontal strokes attached on its left top placed between a pair of parallel vertical lines (sign 39.2)
37.25C	Base sign 37.18 placed with another sign (sign 33.0) to its left
37.26C	Rotated sign 37.18 with sign 2.0 attached with sign 34.1 and sign 39.4 placed right
37.27C	Similar to sign 37.21 but with three horizontal strokes and sign 2.1 attached in the middle and sign 36.0 surmounted with an oblique line placed to it right
37.28C	A bird-like sign with a sign (2.0) placed over it
37.29C	Rotated sign 37.22 with an oblique line attched
37.30C	Similar to sign 37.22 but flipped horizontally and to the right sign 30.0 with two additional strokes in its bottom portion
37.31C	Sign 37.22 with a horizontal line in the middle
37.32C	Y-shaped sign with triangles added on both arms
37.33C	A letter b-shaped sign with sharp angles placed vertically, horizontally and slanting
37.34C	A vertical line attached with a triangle on the top left and an inverted L-shaped sign bottom right

Sign No.	Description
37.35C	Sign 37.23 with a horizontal line attached in middle
37.36C	Similar to sign 37.9 flipped vertically and attached to a horizontal line at top
37.37C	T-shaped sign with a horizontal stroke attached at the bottom right
37.38C	T-shaped sign with horizontal stroke attached at the bottom left
37.39C	Similar to sign 37.10 the upper stroke is slightly more angled and to the right sign 1.2 with a small stroke
37.40C	Similar to sign 37.5 slightly more angled and to the bottom there is one horizontal and vertical line
Sign No. 38 Base sign and its variants	
38.0	A diamond-shaped arrow surmounted a vertical line
38.1	A horizontal line with a diamond-shaped tip on its right end
38.2	A horizontal line with a diamond-shaped tip to its right end
38.3	A diamond-shaped arrow surmounted a vertical line and a U-shaped design kept upside down inside the diamond
38.4	A diamond-shaped design placed at the top of the hook-like line
38.5	A vertical line having circle at the top
38.6	A vertical line having circle at the bottom
38.7	A horizontal line having circles at the left end
38.8	A vertical line superimposed with a circle on the top
38.9	A horizontal line with a circle at the right end
38.1	A downward-turned hook attached to the right side of the circle
38.11	Similar to sign 38.10 but the line extends inside the circle
38.12	A double circle bisected a vertical line
38.13	A curved line having a circle at both ends
38.14	Two horizontal parallel lines having a circle at both ends
38.15	Two vertical parallel lines having a circle at both the ends
Sign No. 38 Base sign in composites	
38.1C	A circle surmounted by a plus-mark sign
38.2C	Sign 10.1 attached with a vertical line capped with a circle
38.3C	Sign 19.0 topped with sign 13.0
38.4C	A circle 19.0 and a rectangular box connected by a horizontal line 28.2
38.5C	Sign 38.6 with a horizontal line to its right with two strokes at the top and bottom on the left and right respectively
38.6C	A vertical line (sign 39.0) with a circle bisected by a vertical line to its right
38.7C	Three 38.6 sign attached to a horizontal line
38.8C	Sign 38.5 with an angled perspective square

Sign No.	Description
38.9C	Similar to sign 38.1C with a semicircle attached to its right
38.10C	A vertical line with a circle at the top and an oblique line with a circle attached to its left
38.11C	Two circles joined with a horizontal line drawn on three vertical lines
38.12C	Two vertical lines with a circle at the top connected by a horizontal line
38.13C	A H-shaped sign with a circle placed over the left vertical line
38.14C	Sign 38.5 and to the right of it two oblique lines topped with a circle which has two-stroke in its top
38.15C	Sign 19.0 placed in two parallel vertical lines and sign 17.1 placed above
38.16C	Two circles placed one above the other surmounted with two vertical strokes
38.17C	A vertical line with a circle at both the ends and a greater than symbol added at the middle of the vertical line (sign 2.2)
38.18C	Two oblique lines joining at the top having circles
38.19C	A triangle having circles on all angles
38.20C	Three signs 38.13 one below the other and the middle one has 38.7 and 38.9 to its left and right
38.21C	A diamond-shaped design placed at the top of the hook-like line and an arrow attached to it's at the centre
38.22C	A diamond-shaped sign with a horizontal line placed at the centre hanging with a V-shaped sign. In addition, a ladder-like sign placed to its right
Sign No. 39 Base sign and its variants	
39.0	A vertical line
39.1	A horizontal line
39.2	A pair of vertical lines
39.3	Two horizontal lines
39.4	Three vertical lines
39.5	Three horizontal lines
39.6	Four vertical lines
39.7	Four horizontal lines
39.8	Five vertical lines
39.9	Six parallel vertical lines
39.10	Six horizontal lines
39.11	Seven parallel vertical lines
39.12	Eight parallel vertical lines
39.13	Nine parallel vertical lines
39.14	Nine horizontal parallel lines tilted
39.15	Sixteen parallel vertical lines

Sign No.	Description
39.16	A pair of vertical lines and a small horizontal stroke added to the right vertical line both at the top and bottom
39.17	A pair of vertical lines and a small horizontal stroke added to the right vertical line at the bottom
39.18	A pair of vertical lines connected by a horizontal line in the middle
Sign No. 39 Base Sign in composites	
39.1C	Fourteen vertical strokes packed on top between two vertical lines and below it there is a crescent
39.2C	L-shaped sign with two parallel vertical lines placed above
39.3C	A horizontal line with a vertical line placed at the left end and a parallel vertical line at the right end
39.4C	Two parallel vertical lines connected by a horizontal line in the middle
39.5C	Two sets of parallel vertical lines divided by a parallel horizontal line
39.6C	Sign 39.0 and 39.2, on which the latter is topped with right-facing sign 3.0
39.7C	A parallel horizontal line with three vertical lines placed next to it
39.8C	Five parallel vertical lines placed with two parallel horizontal lines on the top
39.9C	A combination of one sign 39.0 and A pair of signs 39.3
39.10C	Sign 39.5 with sign 29.3 to the right
39.11C	Three vertical lines added with two parallel oblique lines originating from the top edge of the extreme right vertical line
39.12C	Three vertical lines with a wavy line (sign 34.1) intersected by a vertical line placed to its right
39.13C	Pair of sign 39.4
39.14C	Sign 39.1 with sign 39.5 placed below
39.15C	Four parallel vertical lines with an oblique stroke emanating from the top edge of the second vertical line
39.16C	Two sets of four vertical lines
39.17C	Two pairs of horizontal lines placed above a horizontal lines
39.18C	Three pairs of vertical lines divided by a horizontal line
39.19C	Seven parallel vertical lines superimposed with a Z-shaped sign on extreme four vertical lines
39.20C	Between two 39.0 signs topped with sign 2.0
39.21C	Ten parallel vertical lines placed above a horizontal line
39.22C	A pair of sign 39.11 arranged in the space in between in top
Sign No. 40 Base Sign and its variants	
40.0	A taurine sign
40.1	Similar to 40.0 but upside down and having a conical end

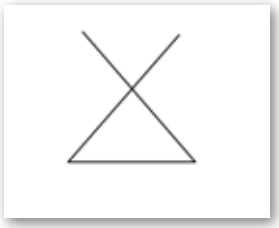
Sign No.	Description
40.2	A triangle, a diamond and a three-pronged fork-like sign (sign 4.0) placed one above the other
Sign No. 40 Base Sign in composites	
40.1C	Two U-shaped pot-like signs placed one above the other on two vertical strokes and an X-mark attached to its left bottom pot
40.2C	Similar to sign 40.2 with a downward stroke on its top left and to its top right sign 15.0 is attached
40.3C	Sign 31.7 with a circle with an opening at the top placed to its left
Sign No. 41 Base Sign and its variants	
41.0	Letter-A like sign
41.1	Upside down of sign 41.0
41.2	Sign 41.0 facing right
41.3	Letter-A-like sign with a horizontal stroke added at the top to its right
41.4	Letter-A-like sign with a horizontal stroke added at the top to its left
41.5	Sign 41.0 having a horizontal line attached at the top right
41.6	Letter A-like sign (sign 41.0) attached with a horizontal line on the top right and middle
41.7	Sign 41.0 having oblique strokes attached at the base
Sign No. 41 Base Sign in composites	
41.1C	Letter-A-like sign with a horizontal line surmounted on it
41.2C	The letter A-like sign with an oblique line on its left
41.3C	The sign 41.0 cut across by an oblique line
41.4C	Letter-A-like sign with a vertical line to its left (sign 39.0)
41.5C	Similar to sign 41.2 facing right
41.6C	Letter-A-like sign with a horizontal stroke added at the top to its left and a vertical line placed to its left (sign 39.0)
41.7C	Sign 41.0 with vertical stroke facing down attached in the middle of the horizontal line
41.8C	Letter-A-like sign with a vertical line (sign 39.0) intersected by a wavy line (sign 34.1) placed to its right
41.9C	Letter-A-like sign with another sign having two oblique lines meeting at the top placed to its left (sign 2.0)
41.10C	Letter-A-like sign with another sign having two oblique lines meeting at the top placed to its right (sign 2.0)
41.11C	Base sign 41.0 capped with sign 2.0
41.12C	Sign 41.0 attached with sign 2.1 on its top
41.13C	Sign 41.0 placed between two vertical strokes to its left and sign 2.0 to the right and all three are topped with a horizontal line

Sign No.	Description
41.14C	Sign 41.0 another sign (sign 3.0) with an arrow mark attached to its top placed to its right
41.15C	Sign 41.0 with curvy top and an upside-down triangle to its right
41.16C	Sign 41.0 and sign 18.0 superimposed with a parallel horizontal line and sign 10.0 attached at the base of the left oblique line
41.17C	Sign 41.0 and to its right sign 15.1 is placed with sign 11.0 inside it
41.18C	Sign 41.0 with extending line sat the bottom and horizontal lines to right at top and bottom
41.19C	Sign 41.0 with a horizontal line extending on its top and bottom and sign 37.4 superimposed
Sign No. 42 Base sign and its variants	
42.0	A vertical line having two spirals each at the top and bottom
42.1	Two curved lines having spirals attached at the top and bottom
42.2	Two vertical lines having spirals attached at the top and bottom.
42.3	Two vertical lines connected by two horizontal lines in the middle having spirals each attached at the top and the bottom
42.4	Base sign 10.0 with a small spiral at both ends of the oblique lines
42.5	Similar to sign 42.4, like a megalithic andromorphic figure
42.6	Vertical line with a spiral end at the top
Sign No. 42 Base sign in composites	
42.1C	A vertical line with a spiral at the base left with a horizontal stroke in the middle
42.2C	A vertical line (sign 39.0) with a spiral to its right
42.3C	A vertical line having two spirals at the top and the bottom and three-pronged fork-like sign (3.0) placed to its left
42.4C	A vertical line having two spirals at the top and the bottom. An Asokan Brahmi “Ma” like sign placed inside a U-shaped sign
42.5C	Two vertical lines connected by two horizontal lines in the middle having spirals attached at the top and the bottom. The vertical lines are capped with two oblique lines (sign 2.0)
42.6C	Two parallel vertical lines having spirals attached at the top and bottom. Another X-shaped sign 30.0 placed to its right
42.7C	An anthropomorphic-like sign capped with two semi-circular or U-shaped lines on the top
42.8C	Two vertical lines with spiral ends on top attached to a semi-circle on top

SIGN TABLE

5.3 Sign Table

Basic Signs



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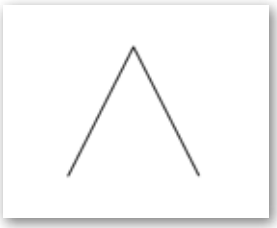

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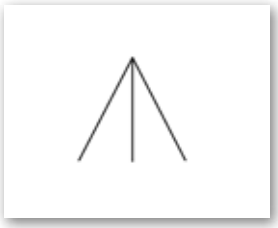

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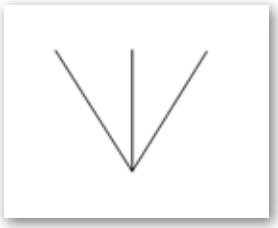

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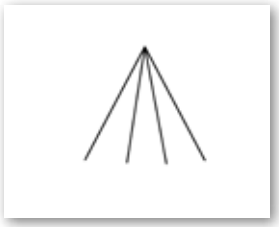

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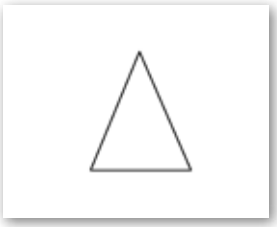

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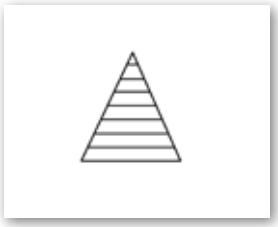

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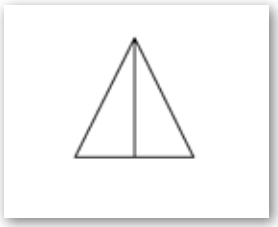

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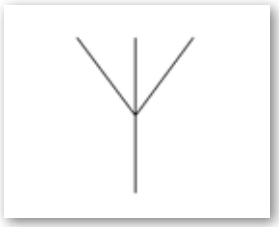

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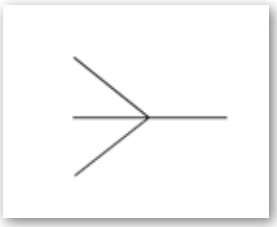

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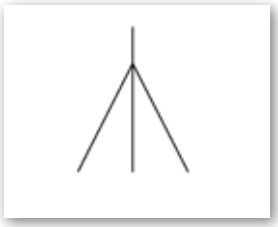

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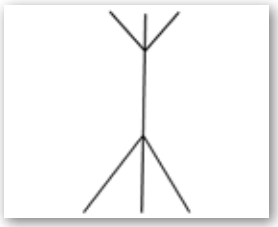
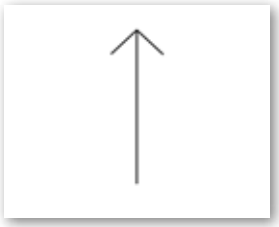
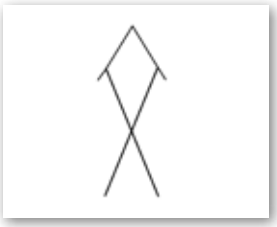


Sign No. 12.0



Sign No. 13.0



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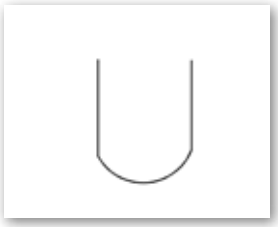
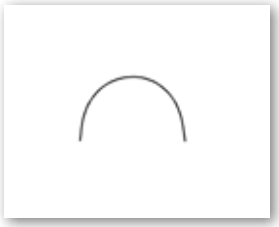
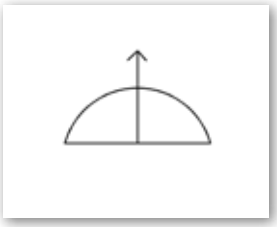


Sign No. 15.0

Sign No. 16.0



Sign No. 17.0



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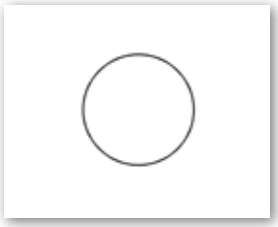

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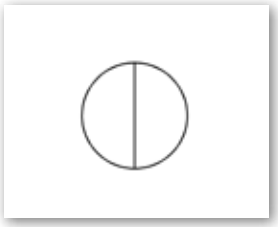
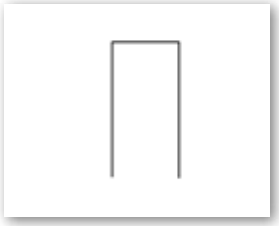
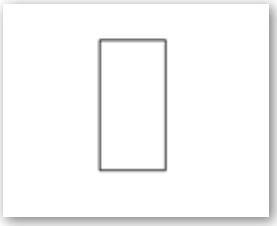
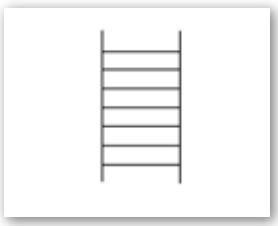


Sign No. 20.0

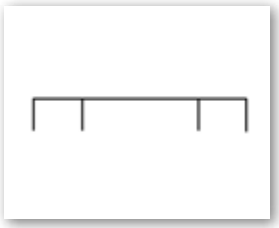
Basic Signs

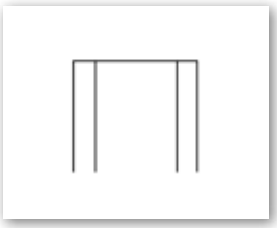

Sign No. 21.0


Sign No. 22.0

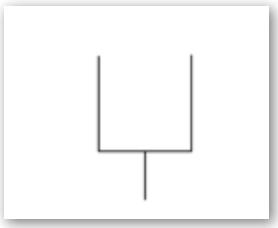

Sign No. 23.0

Sign No. 24.0


Sign No. 25.0


Sign No. 26.0

Sign No. 27.0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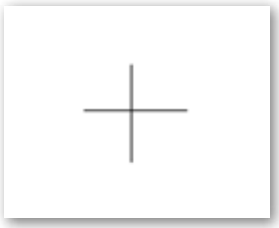
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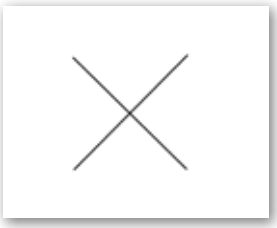
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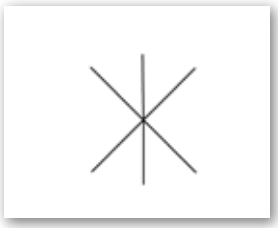
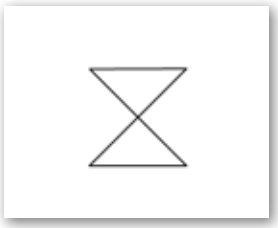

Sign No. 31.0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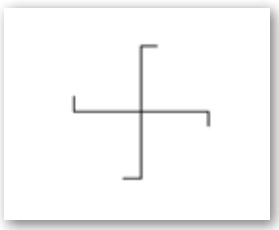
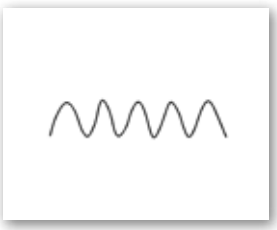
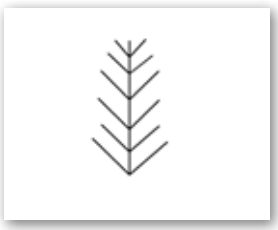
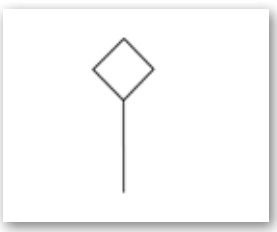

Sign No. 33.0


Sign No. 34.0

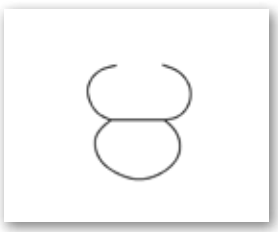

Sign No. 35.0

Sign No. 36.0

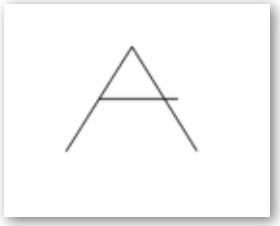
Sign No. 37.0


Sign No. 38.0

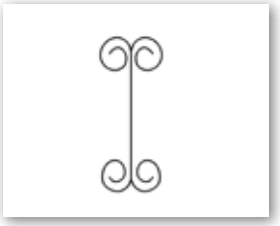
Sign No. 39.0


Sign No. 40.0

Basic Signs

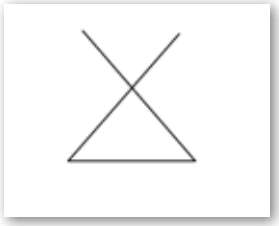


Sign No. 41.0

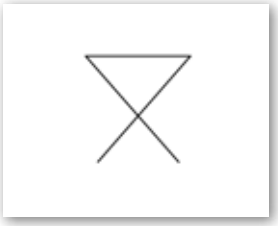


Sign No. 42.0

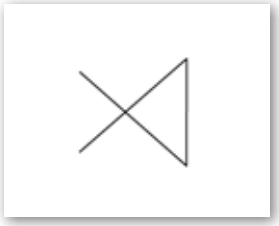
Sign No.1-Base & Its Variants



Sign No. 1.0



Sign No. 1.1



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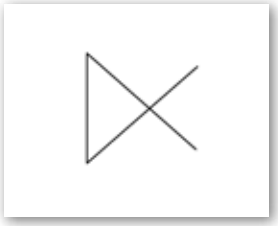
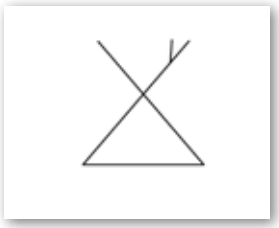
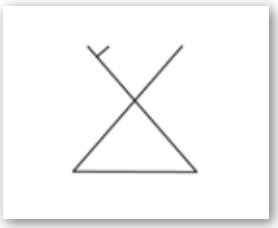


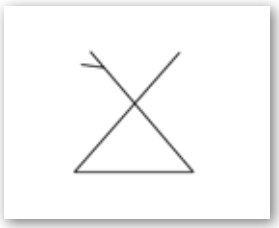
Sign No. 1.3



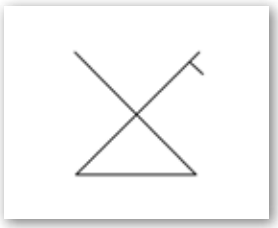
Sign No. 1.4



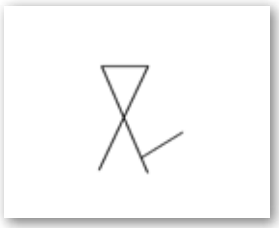
Sign No. 1.5



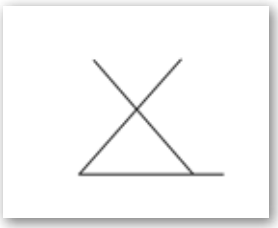
Sign No. 1.6



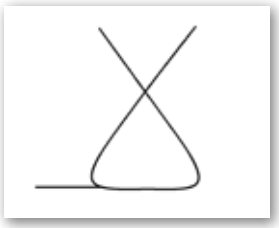
Sign No. 1.7



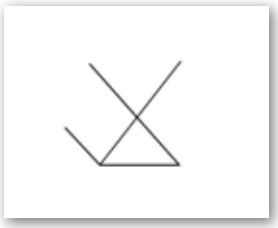
Sign No. 1.8



Sign No. 1.9

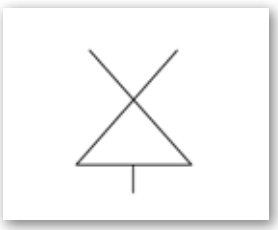


Sign No. 1.10

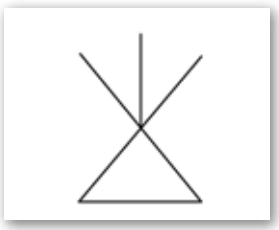


Sign No. 1.11

Sign No. 1.12

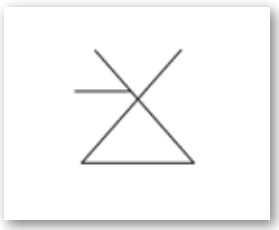


Sign No. 1.13

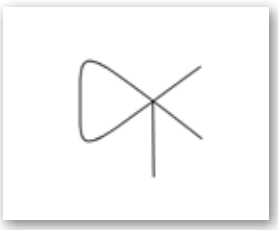


Sign No. 1.14

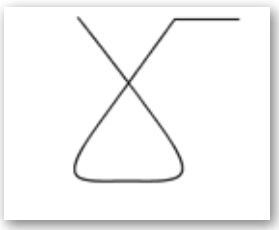
Sign No. 1.15



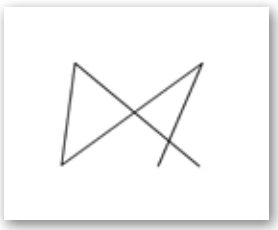
Sign No. 1.16



Sign No. 1.17

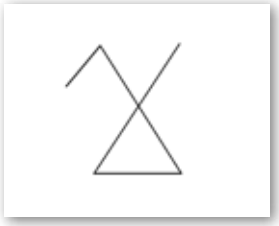


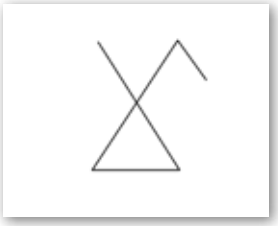
Sign No. 1.18

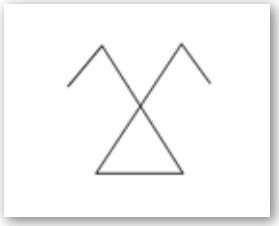


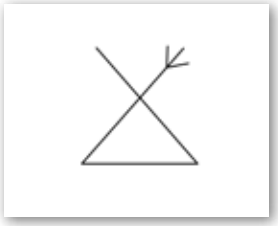
Sign No. 1.19

Sign No.1-Base & Its Variants


Sign No. 1.20


Sign No. 1.21


Sign No. 1.22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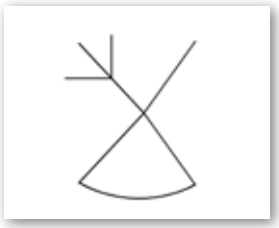
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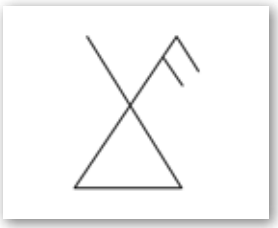
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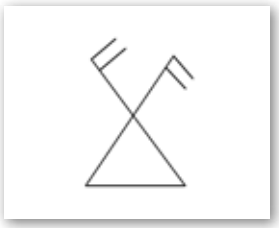
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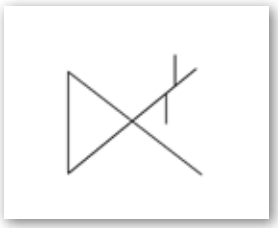
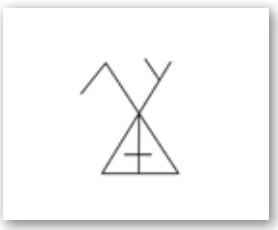
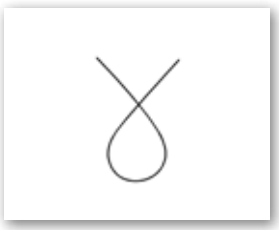

Sign No. 1.27

Sign No. 1.28


Sign No. 1.29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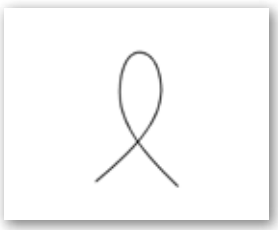
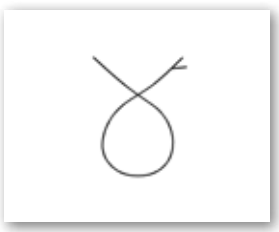

Sign No. 1.31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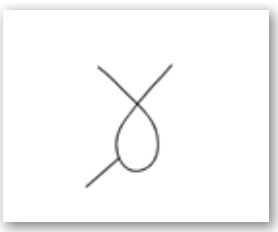
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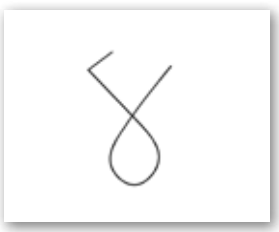
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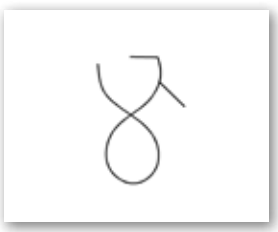
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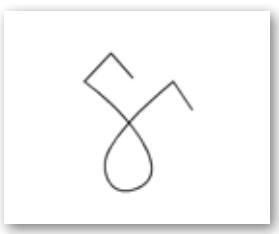
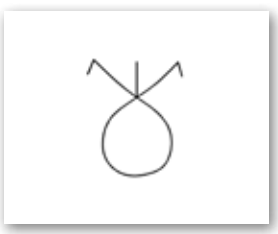

Sign No. 1.36

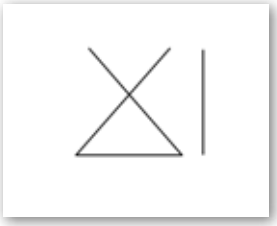
Sign No. 1.37

Sign No. 1.38


Sign No. 1.39

Sign No.1-Base & Its Variants

Sign No. 1.1C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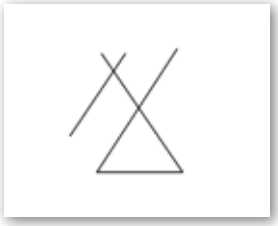
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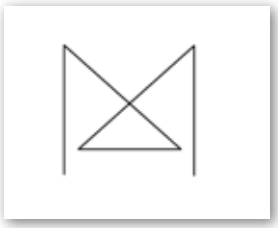
Sign No. 1.4C

Sign No. 1.5C

Sign No. 1.6C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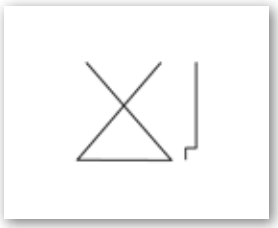
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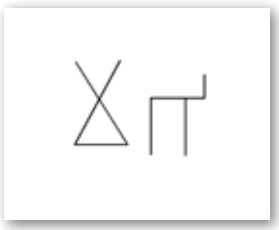
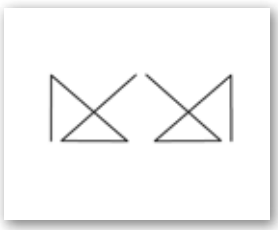

Sign No. 1.9C

Sign No. 1.10C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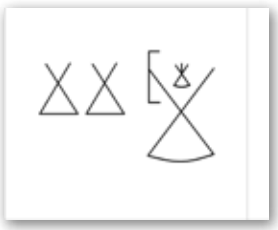
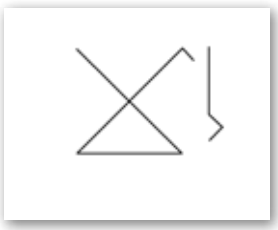

Sign No. 1.12C

Sign No. 1.13C

Sign No. 1.14C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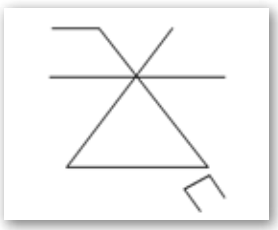
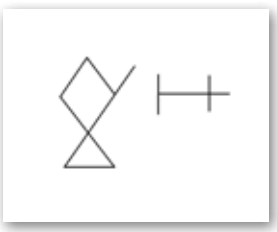

Sign No. 1.16C

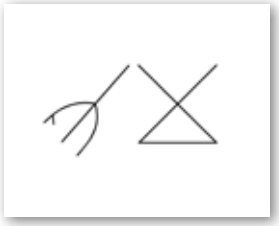
Sign No. 1.17C


Sign No. 1.18C

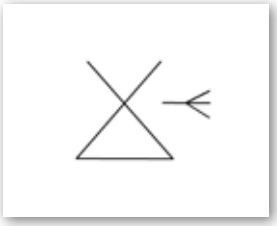
Sign No. 1.19C

Sign No. 1.20C

Sign No.1-Composites

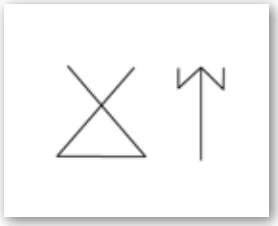


Sign No. 1.21C



Sign No. 1.22C

Sign No. 1.23C



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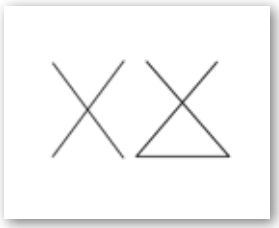

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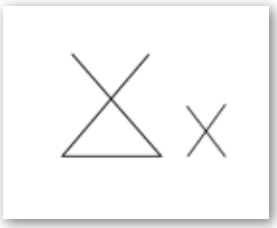
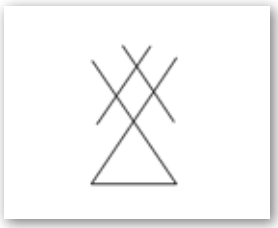


Sign No. 1.26C



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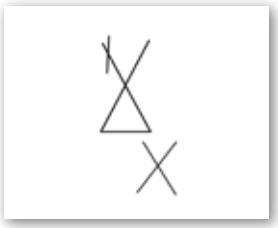
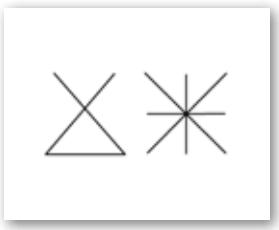
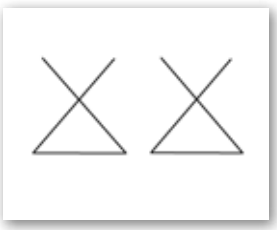


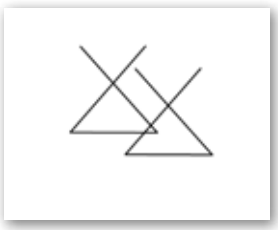
Sign No. 1.28C



Sign No. 1.29C



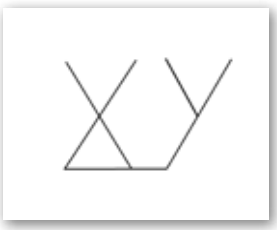
Sign No. 1.30C



Sign No. 1.31C

Sign No. 1.32C

Sign No. 1.33C



Sign No. 1.34C

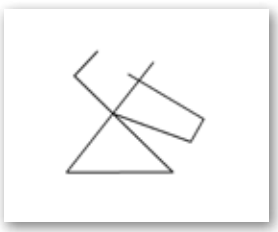
Sign No. 1.35C

Sign No. 1.36C

Sign No. 1.37C

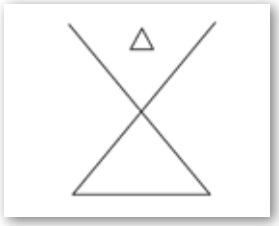
Sign No. 1.38C

Sign No. 1.39C

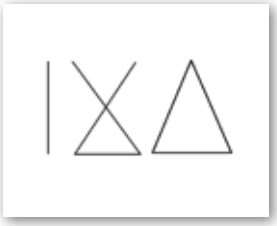


Sign No. 1.40C

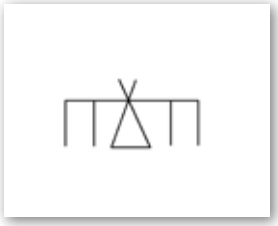
Sign No.1-Composites



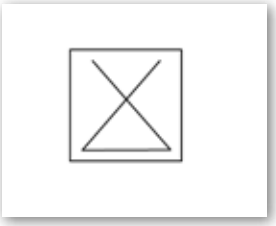
Sign No. 1.41C



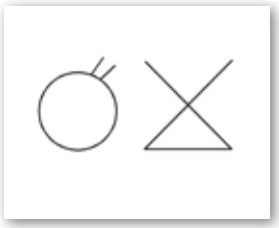
Sign No. 1.42C



Sign No. 1.43C

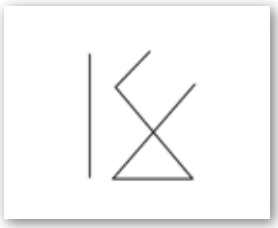


Sign No. 1.44C



Sign No. 1.45C

Sign No. 1.46C



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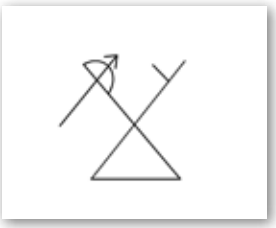
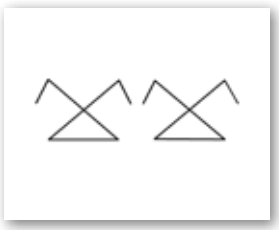
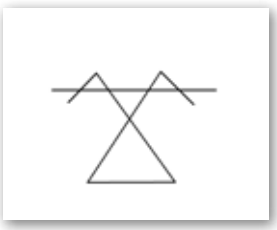


Sign No. 1.48C

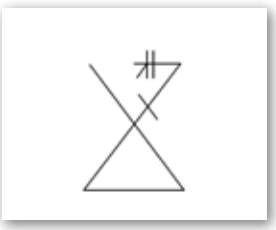


Sign No. 1.49C

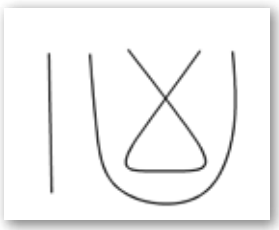


Sign No. 1.50C

Sign No. 1.51C

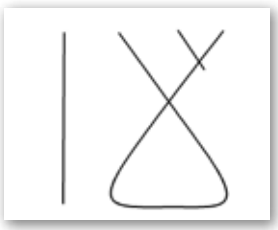


Sign No. 1.52C



Sign No. 1.53C

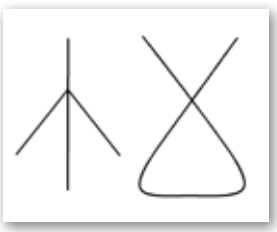
Sign No. 1.54C



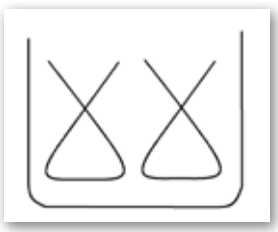
Sign No. 1.55C

Sign No. 1.56C

Sign No. 1.57C



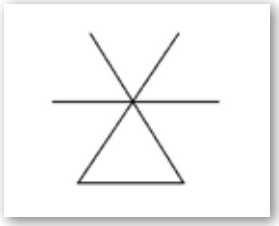
Sign No. 1.58C



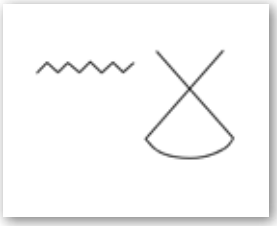
Sign No. 1.59C

Sign No. 1.60C

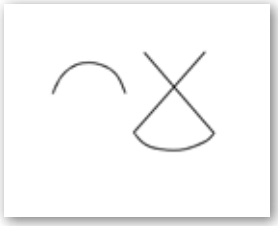
Sign No.1-Composites



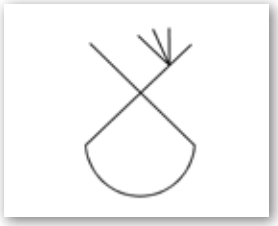
Sign No. 1.61C



Sign No. 1.62C

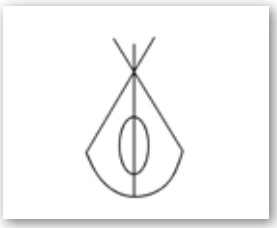


Sign No. 1.63C

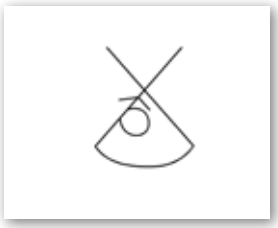


Sign No. 1.64C

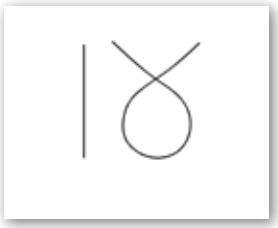
Sign No. 1.65C



Sign No. 1.66C

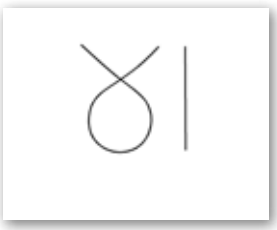


Sign No. 1.67C

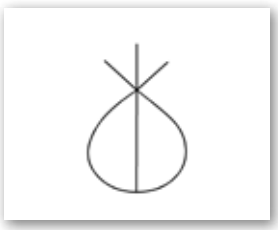


Sign No. 1.68C

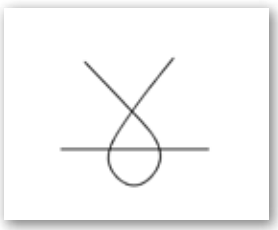
Sign No. 1.69C



Sign No. 1.70C

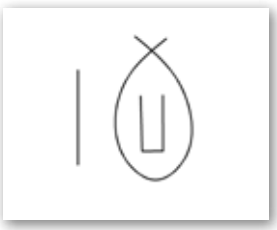


Sign No. 1.71C



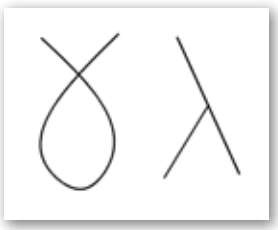
Sign No. 1.72C

Sign No. 1.73C



Sign No. 1.74C

Sign No. 1.75C



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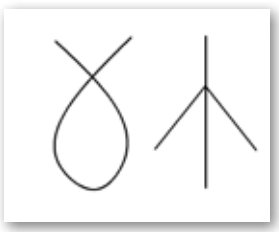
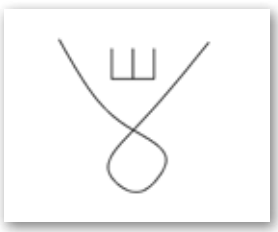


Sign No. 1.77C

Sign No. 1.78C



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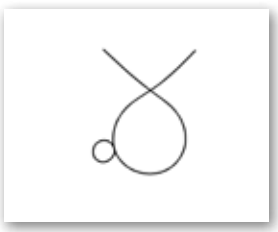
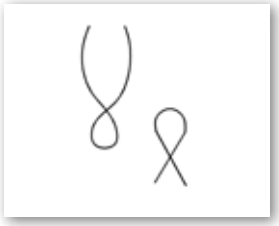
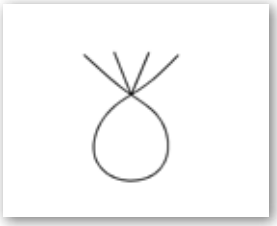


Sign No. 1.80C

Sign No.1-Composites



Sign No. 1.81C



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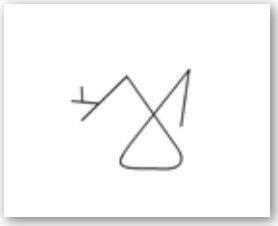
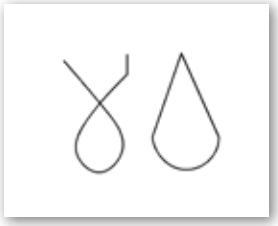
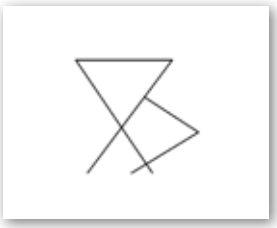


Sign No. 1.83C



Sign No. 1.84C

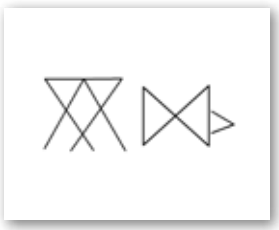
Sign No. 1.85C



Sign No. 1.86C

Sign No. 1.87C

Sign No. 1.88C



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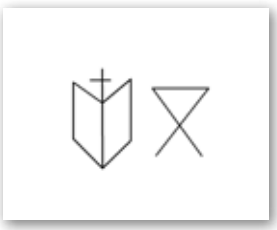

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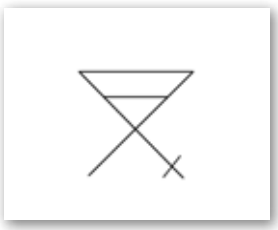
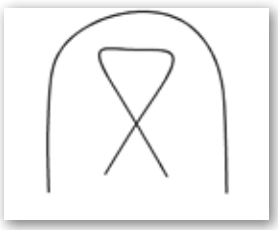


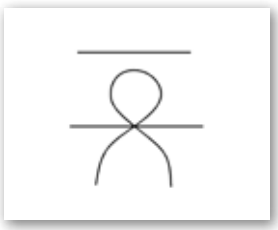
Sign No. 1.91C



Sign No. 1.92C

Sign No. 1.93C

Sign No. 1.94C



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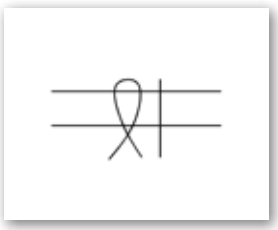
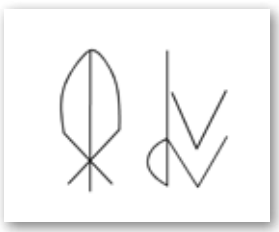


Sign No. 1.96C



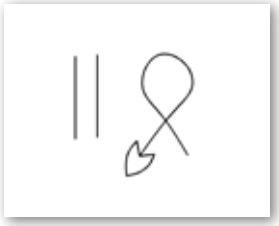
Sign No. 1.97C

Sign No. 1.98C

Sign No. 1.99C

Sign No. 1.100C

Sign No.1-Composites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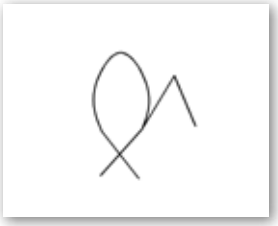
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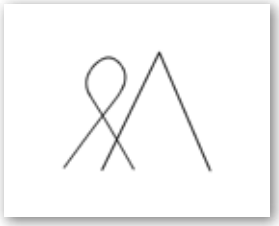
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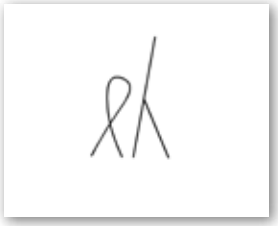
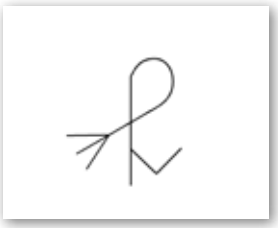

Sign No. 1.104C

Sign No. 1.105C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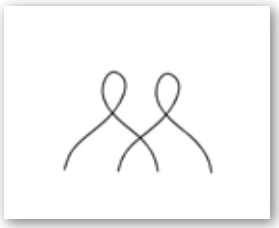
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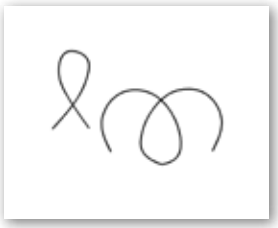
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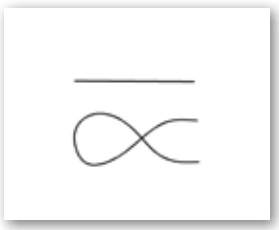
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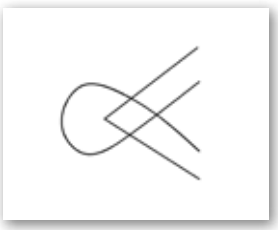
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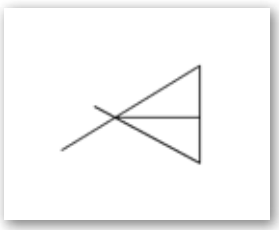
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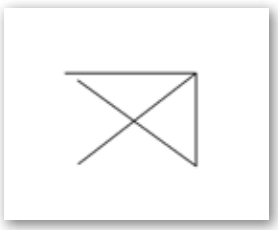
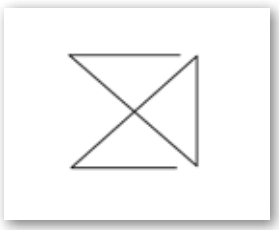
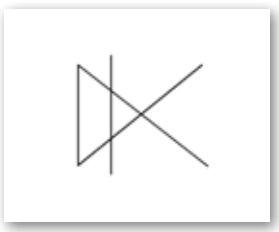

Sign No. 1.112C


Sign No. 1.113C

Sign No. 1.114C

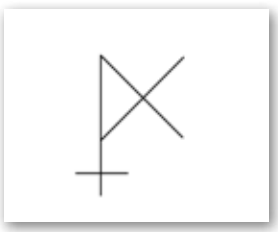
Sign No. 1.115C

Sign No. 1.116C


Sign No. 1.117C

Sign No. 1.118C

Sign No. 1.119C


Sign No. 1.120C

Sign No.1-Composites

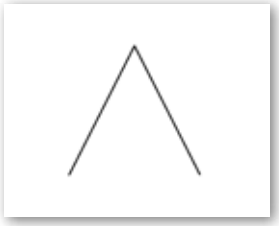
Sign No. 1.121C

Sign No. 1.122C

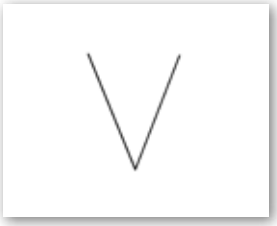
Sign No. 1.123C

Sign No. 1.124C

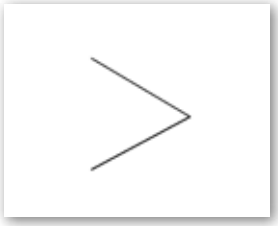
Sign No.2-Base & Its Variants



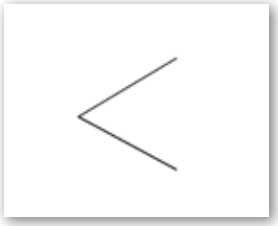
Sign No. 2.0



Sign No. 2.1



Sign No. 2.2



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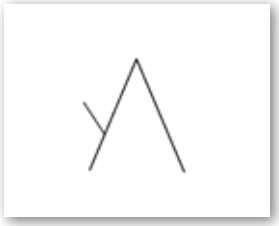
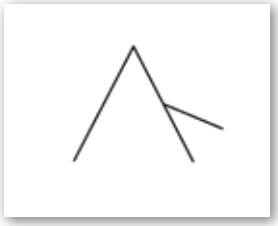


Sign No. 2.4

Sign No. 2.5



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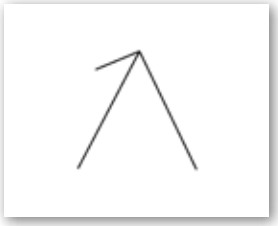
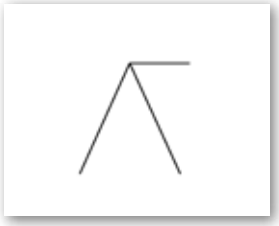
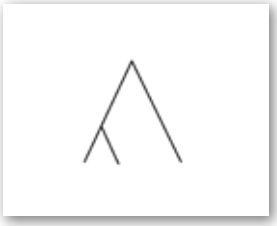


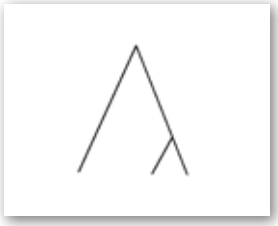
Sign No. 2.7



Sign No. 2.8

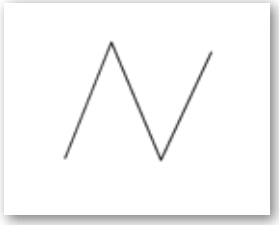


Sign No. 2.9

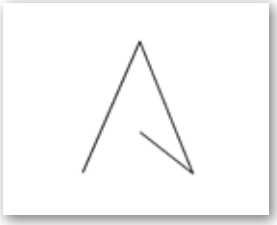


Sign No. 2.10

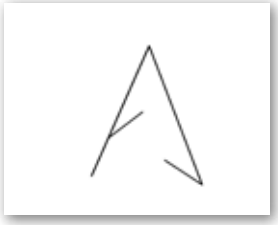
Sign No. 2.11



Sign No. 2.12

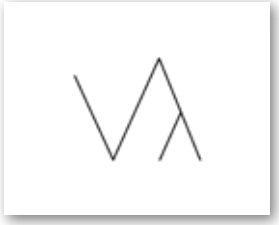


Sign No. 2.13

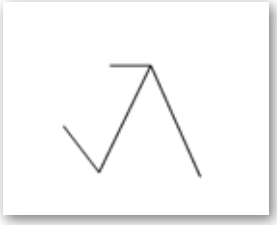


Sign No. 2.14

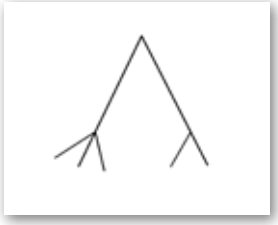
Sign No. 2.15



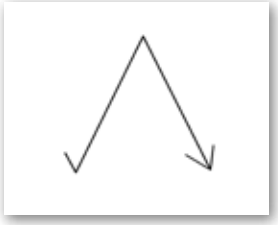
Sign No. 2.16



Sign No. 2.17

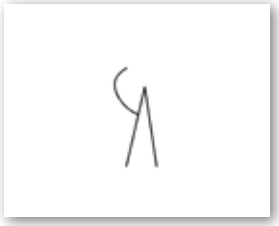


Sign No. 2.18

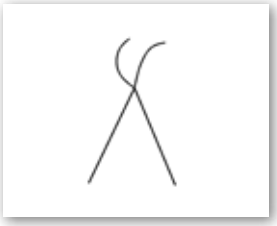


Sign No. 2.19

Sign No.2-Base & Its Variants



Sign No. 2.20

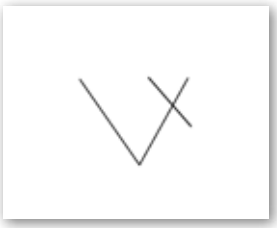


Sign No. 2.21

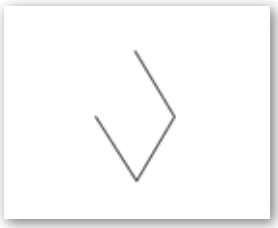
Sign No. 2.22

Sign No. 2.23

Sign No. 2.24

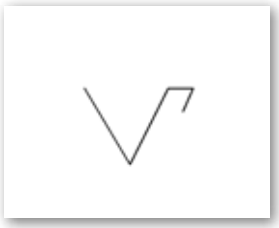


Sign No. 2.25



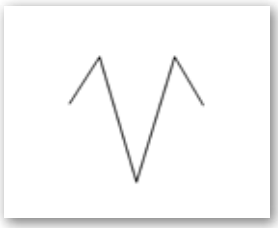
Sign No. 2.26

Sign No. 2.27



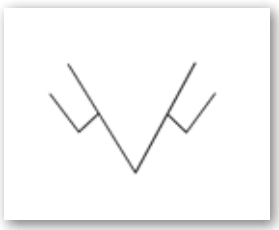
Sign No. 2.28

Sign No. 2.29



Sign No. 2.30

Sign No. 2.31



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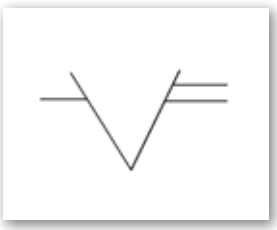
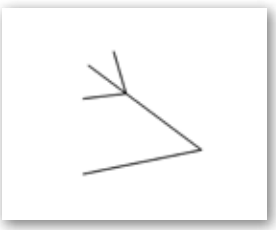


Sign No. 2.33

Sign No. 2.34



Sign No. 2.35

Sign No. 2.36

Sign No. 2.37

Sign No.2-Composites

Sign No. 2.1C

Sign No. 2.2C

Sign No. 2.3C

Sign No. 2.4C

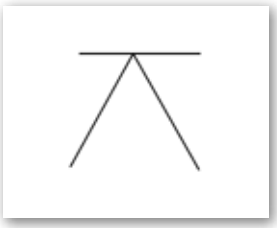
Sign No. 2.5C

Sign No. 2.6C

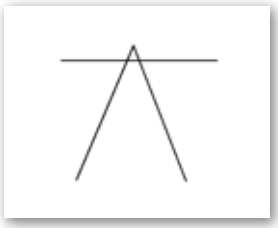
Sign No. 2.7C

Sign No. 2.8C

Sign No. 2.9C



Sign No. 2.10C



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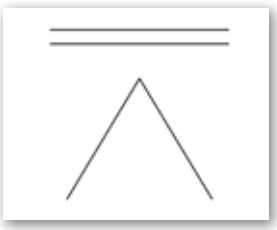
Sign No. 2.12C

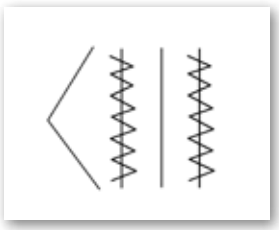
Sign No. 2.13C



Sign No. 2.14C

Sign No. 2.15C

Sign No. 2.16C



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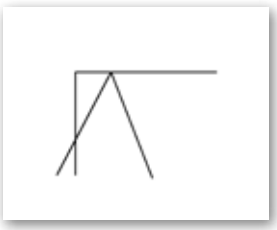


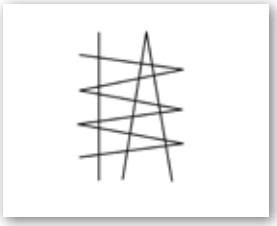
Sign No. 2.18C

Sign No. 2.19C

Sign No. 2.20C

Sign No.2-Composites

Sign No. 2.21C

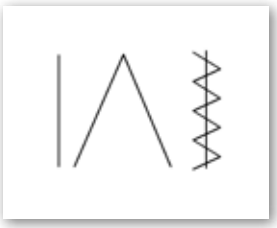


Sign No. 2.22C

Sign No. 2.23C

Sign No. 2.24C

Sign No. 2.25C

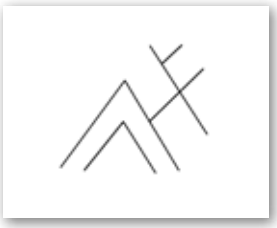


Sign No. 2.26C

Sign No. 2.27C

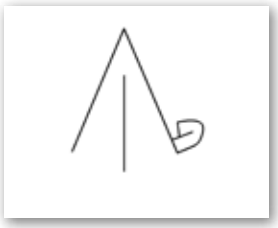
Sign No. 2.28C

Sign No. 2.29C



Sign No. 2.30C

Sign No. 2.31C



Sign No. 2.32C

Sign No. 2.33C

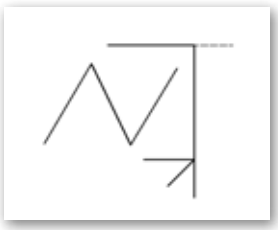
Sign No. 2.34C

Sign No. 2.35C

Sign No. 2.36C

Sign No. 2.37C

Sign No. 2.38C



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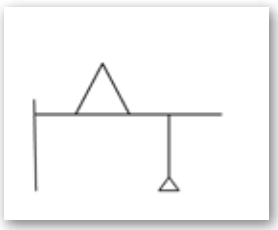


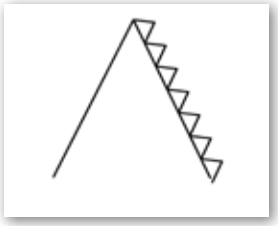
Sign No. 2.40C

Sign No.2-Composites

Sign No. 2.41C

Sign No. 2.42C

Sign No. 2.43C



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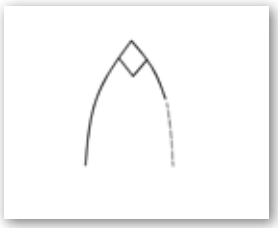
Sign No. 2.45C

Sign No. 2.46C

Sign No. 2.47C



Sign No. 2.48C

Sign No. 2.49C

Sign No. 2.50C

Sign No. 2.51C

Sign No. 2.52C

Sign No. 2.53C

Sign No. 2.54C

Sign No. 2.55C

Sign No. 2.56C

Sign No. 2.57C

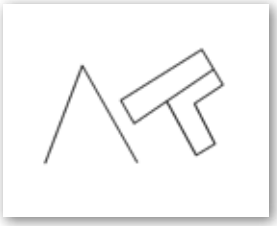
Sign No. 2.58C

Sign No. 2.59C

Sign No. 2.60C

Sign No.2-Composites

Sign No. 2.61C



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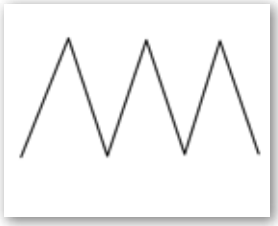
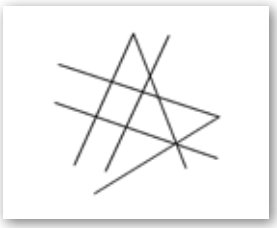


Sign No. 2.63C

Sign No. 2.64C

Sign No. 2.65C



Sign No. 2.66C

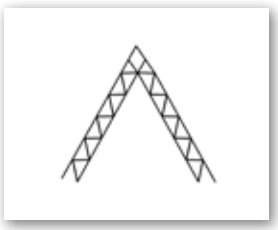
Sign No. 2.67C

Sign No. 2.68C

Sign No. 2.69C

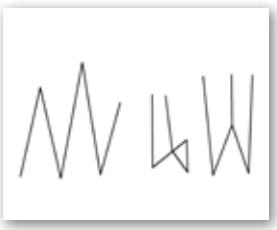
Sign No. 2.70C

Sign No. 2.71C



Sign No. 2.72C

Sign No. 2.73C



Sign No. 2.74C

Sign No. 2.75C

Sign No. 2.76C

Sign No. 2.77C

Sign No. 2.78C

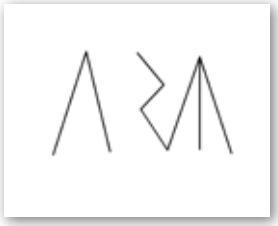
Sign No. 2.79C

Sign No. 2.80C

Sign No.2-Composites

Sign No. 2.81C

Sign No. 2.82C



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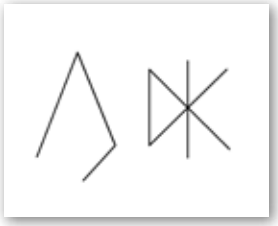
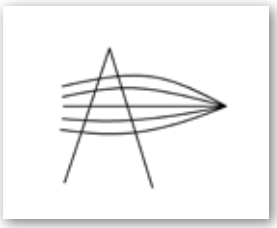


Sign No. 2.84C

Sign No. 2.85C

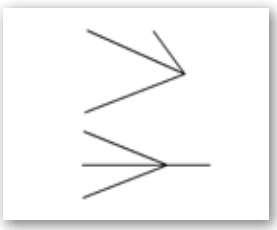


Sign No. 2.86C

Sign No. 2.87C

Sign No. 2.88C

Sign No. 2.89C



Sign No. 2.90C

Sign No. 2.91C

Sign No. 2.92C

Sign No. 2.93C

Sign No. 2.94C

Sign No. 2.95C

Sign No. 2.96C

Sign No. 2.97C

Sign No. 2.98C

Sign No. 2.99C

Sign No. 2.100C

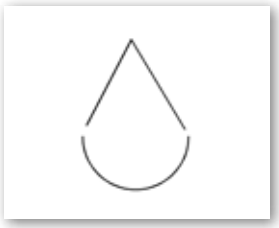
Sign No.2-Composites

Sign No. 2.101C

Sign No. 2.102C

Sign No. 2.103C

Sign No. 2.104C



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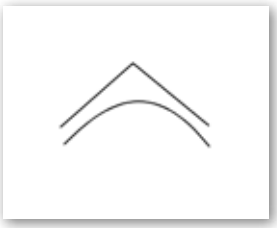

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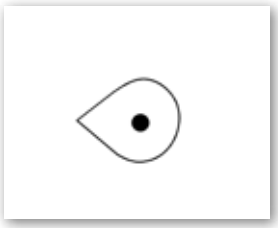
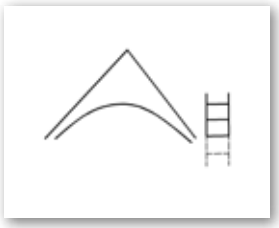


Sign No. 2.107C

Sign No. 2.108C



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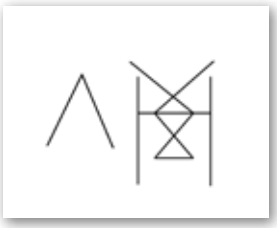

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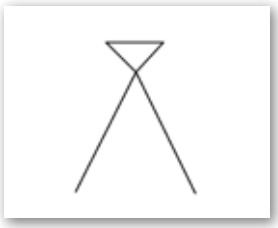
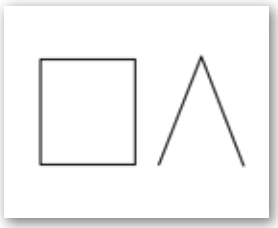


Sign No. 2.111C



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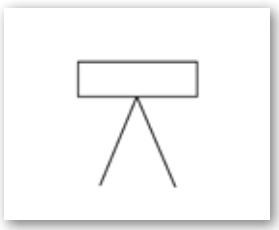
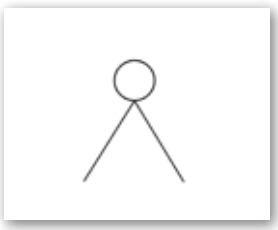


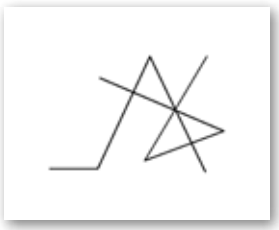
Sign No. 2.113C

Sign No. 2.114C



Sign No. 2.115C

Sign No. 2.116C



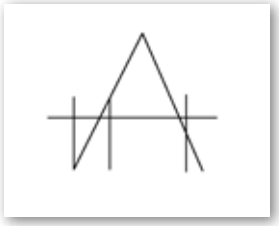
Sign No. 2.117C

Sign No. 2.118C

Sign No. 2.119C

Sign No. 2.120C

Sign No.2-Composites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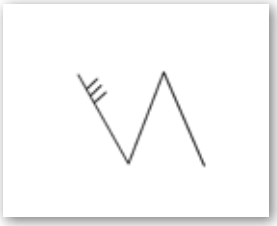
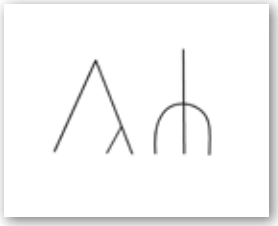

Sign No. 2.122C

Sign No. 2.123C

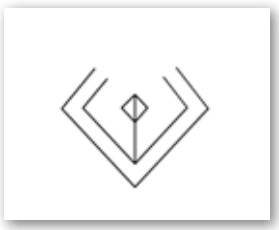

Sign No. 2.124C

Sign No. 2.125C

Sign No. 2.126C

Sign No. 2.127C

Sign No. 2.128C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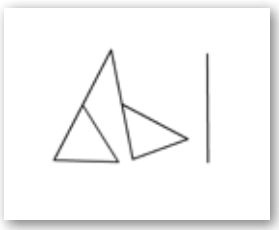
Sign No. 2.130C

Sign No. 2.131C

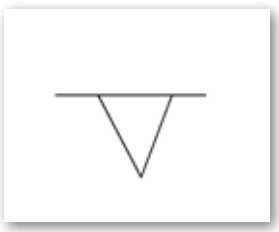
Sign No. 2.132C


Sign No. 2.133C

Sign No. 2.134C

Sign No. 2.135C

Sign No. 2.136C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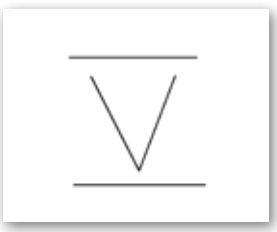

Sign No. 2.138C

Sign No. 2.139C

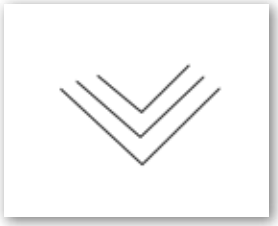
Sign No. 2.140C

Sign No.2-Composites

Sign No. 2.141C

Sign No. 2.142C

Sign No. 2.143C

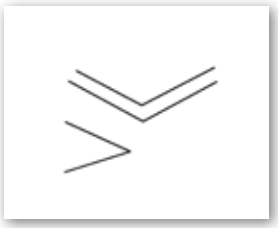


Sign No. 2.144C

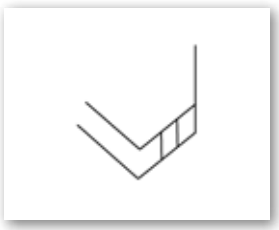
Sign No. 2.145C

Sign No. 2.146C

Sign No. 2.147C



Sign No. 2.148C



Sign No. 2.149C

Sign No. 2.150C

Sign No. 2.151C

Sign No. 2.152C

Sign No. 2.153C

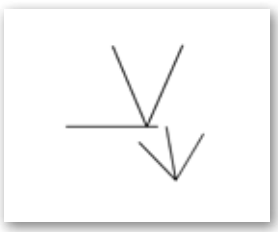
Sign No. 2.154C

Sign No. 2.155C

Sign No. 2.156C

Sign No. 2.157C

Sign No. 2.158C



Sign No. 2.159C

Sign No. 2.160C

Sign No.2-Composites

Sign No. 2.161C

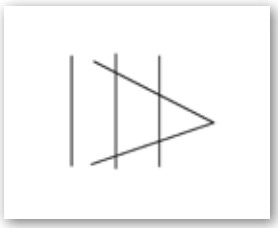
Sign No. 2.162C

Sign No. 2.163C

Sign No. 2.164C

Sign No. 2.165C

Sign No. 2.166C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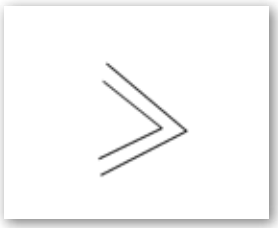
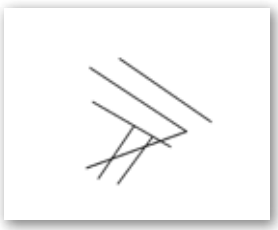

Sign No. 2.168C

Sign No. 2.169C

Sign No. 2.170C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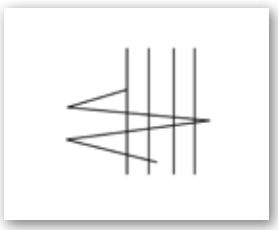
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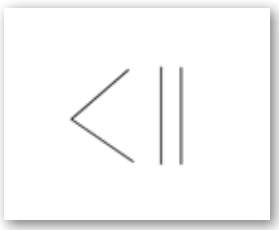
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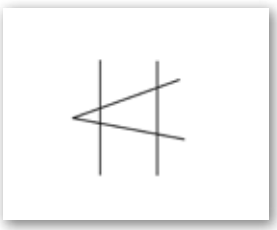
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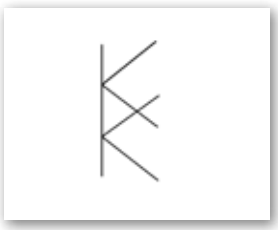
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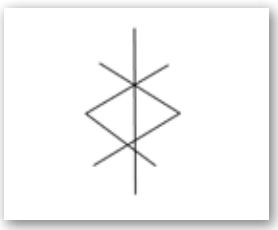
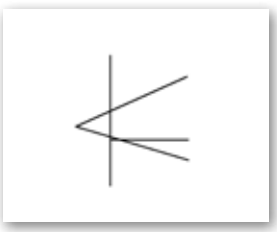

Sign No. 2.176C

Sign No. 2.177C


Sign No. 2.178C

Sign No. 2.179C

Sign No.3-Base & Its Variants

Sign No. 3.0

Sign No. 3.1

Sign No. 3.2

Sign No. 3.3

Sign No. 3.4

Sign No. 3.5

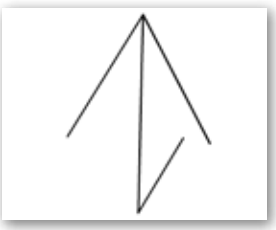
Sign No. 3.6

Sign No. 3.7

Sign No. 3.8

Sign No. 3.9

Sign No. 3.10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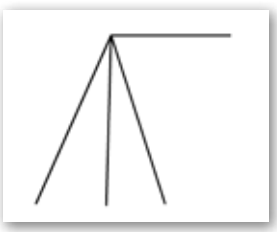
Sign No. 3.12


Sign No. 3.13

Sign No. 3.14

Sign No. 3.15

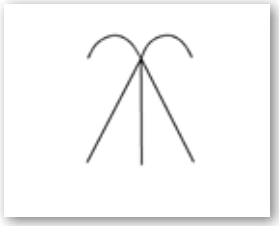
Sign No. 3.16

Sign No. 3.17

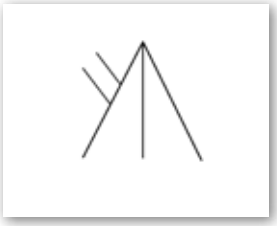
Sign No. 3.18

Sign No. 3.19

Sign No.3-Base & Its Variants

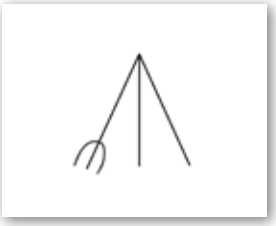


Sign No. 3.20



Sign No. 3.21

Sign No. 3.22



Sign No. 3.23

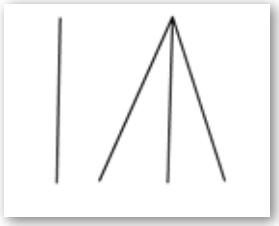
Sign No. 3.24

Sign No. 3.25

Sign No. 3.26

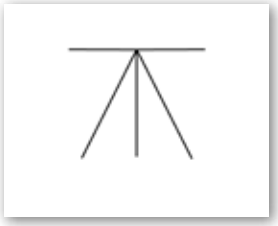
Sign No. 3.27

Sign No.3-Composites

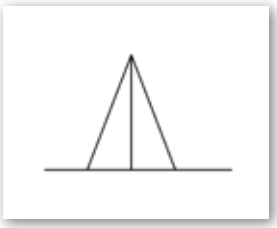

Sign No. 3.1C

Sign No. 3.2C

Sign No. 3.3C


Sign No. 3.4C

Sign No. 3.5C


Sign No. 3.6C

Sign No. 3.7C

Sign No. 3.8C

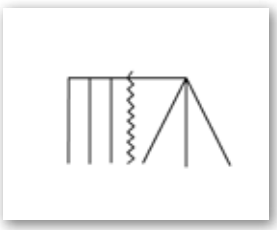
Sign No. 3.9C

Sign No. 3.10C

Sign No. 3.11C

Sign No. 3.12C

Sign No. 3.13C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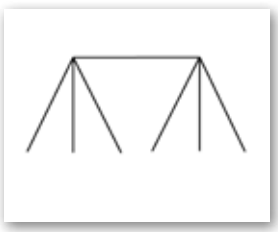
Sign No. 3.15C

Sign No. 3.16C

Sign No. 3.17C

Sign No. 3.18C


Sign No. 3.19C

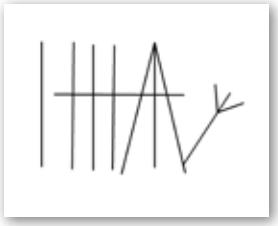
Sign No. 3.20C

Sign No.3-Composites

Sign No. 3.21C

Sign No. 3.22C

Sign No. 3.23C

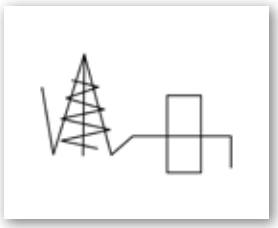


Sign No. 3.24C

Sign No. 3.25C

Sign No. 3.26C

Sign No. 3.27C



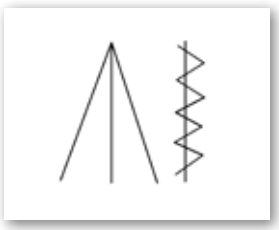
Sign No. 3.28C

Sign No. 3.29C

Sign No. 3.30C

Sign No. 3.31C

Sign No. 3.32C



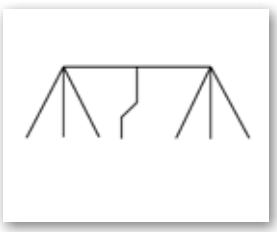
Sign No. 3.33C

Sign No. 3.34C

Sign No. 3.35C

Sign No. 3.36C

Sign No. 3.37C

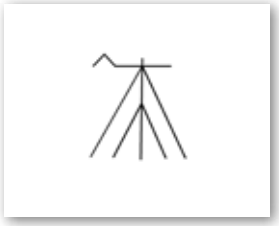


Sign No. 3.38C

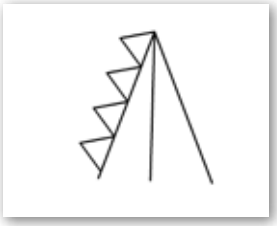
Sign No. 3.39C

Sign No. 3.40C

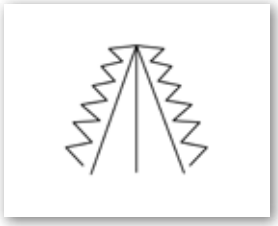
Sign No.3-Composites



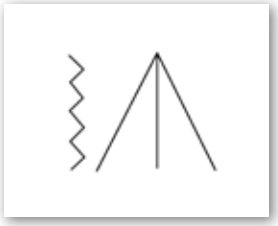
Sign No. 3.41C



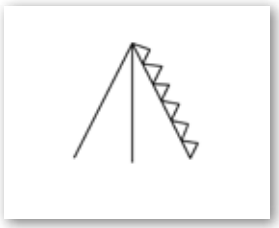
Sign No. 3.42C



Sign No. 3.43C

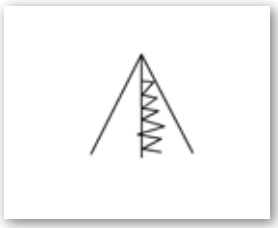


Sign No. 3.44C

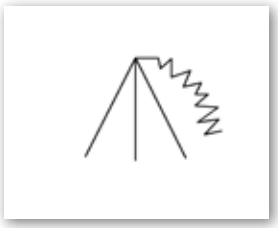


Sign No. 3.45C

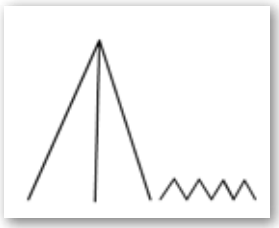
Sign No. 3.46C



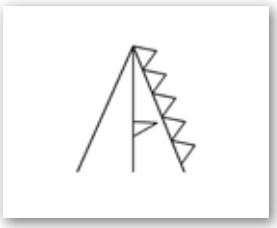
Sign No. 3.47C



Sign No. 3.48C

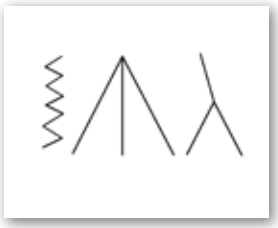


Sign No. 3.49C

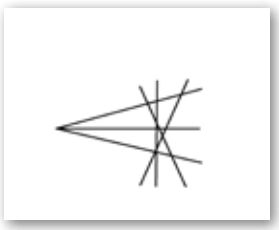


Sign No. 3.50C

Sign No. 3.51C

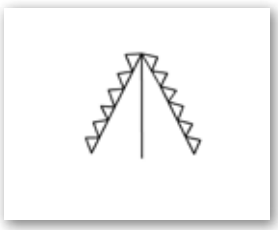


Sign No. 3.52C



Sign No. 3.53C

Sign No. 3.54C



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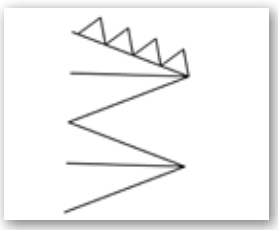
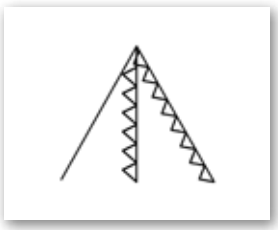


Sign No. 3.56C

Sign No. 3.57C

Sign No. 3.58C

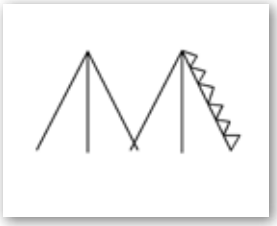


Sign No. 3.59C

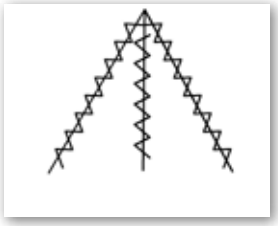
Sign No. 3.60C

Sign No.3-Composites

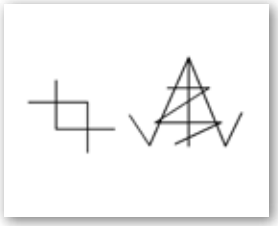
Sign No. 3.61C



Sign No. 3.62C

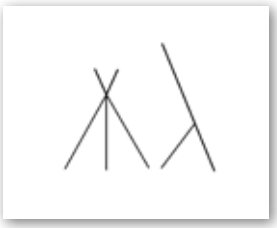


Sign No. 3.63C

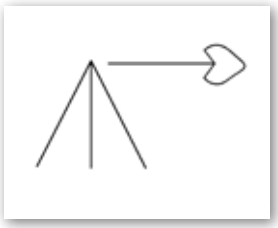


Sign No. 3.64C

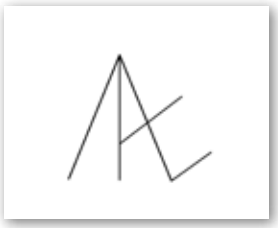
Sign No. 3.65C



Sign No. 3.66C



Sign No. 3.67C



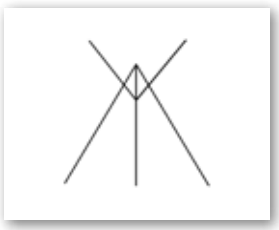
Sign No. 3.68C

Sign No. 3.69C

Sign No. 3.70C

Sign No. 3.71C

Sign No. 3.72C



Sign No. 3.73C

Sign No. 3.74C

Sign No. 3.75C

Sign No. 3.76C

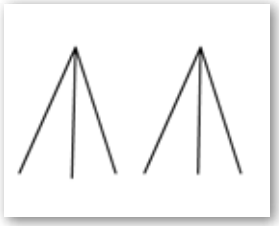
Sign No. 3.77C

Sign No. 3.78C

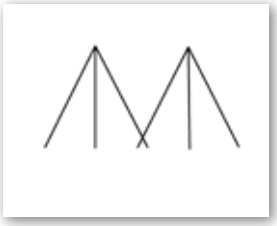
Sign No. 3.79C

Sign No. 3.80C

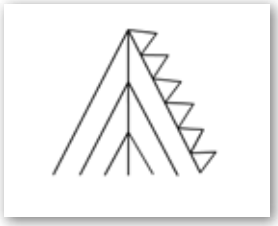
Sign No.3-Composites



Sign No. 3.81C



Sign No. 3.82C



Sign No. 3.83C

Sign No. 3.84C

Sign No. 3.85C

Sign No. 3.86C

Sign No. 3.87C

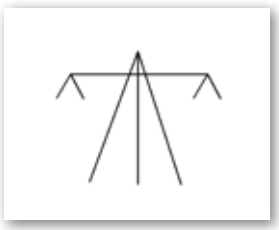
Sign No. 3.88C

Sign No. 3.89C

Sign No. 3.90C

Sign No. 3.91C

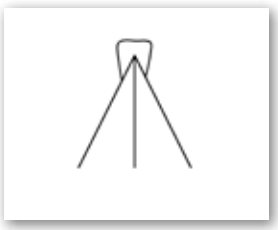
Sign No. 3.92C



Sign No. 3.93C

Sign No. 3.94C

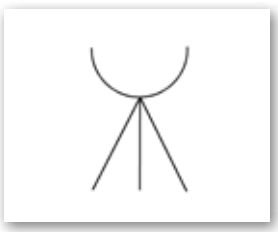
Sign No. 3.95C



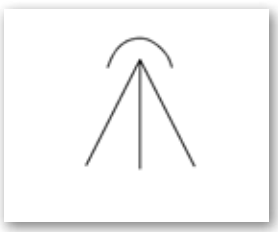
Sign No. 3.96C

Sign No. 3.97C

Sign No. 3.98C

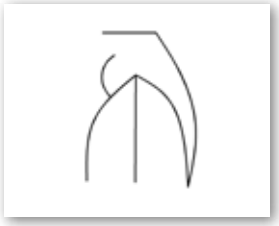


Sign No. 3.99C

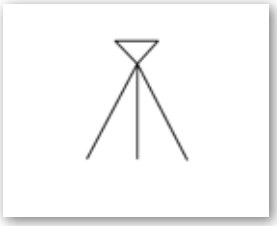


Sign No. 3.100C

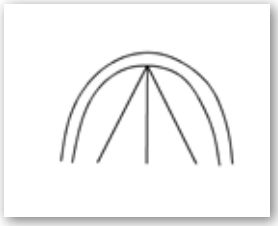
Sign No.3-Composites



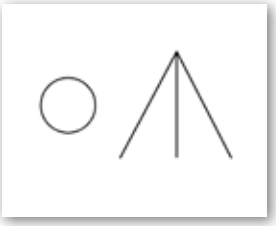
Sign No. 3.101C



Sign No. 3.102C



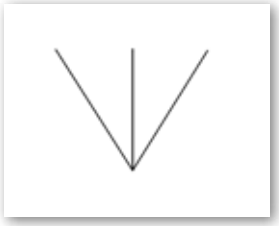
Sign No. 3.103C



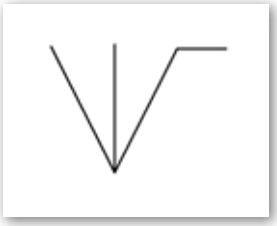
Sign No. 3.104C

Sign No. 3.105C

Sign No.4-Base & Its Variants

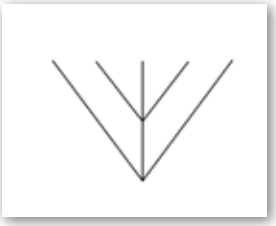


Sign No. 4.0



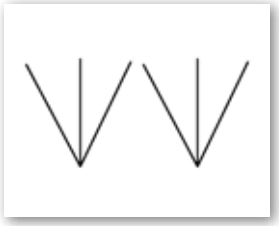
Sign No. 4.1

Sign No. 4.2

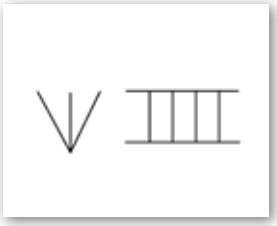


Sign No. 4.3

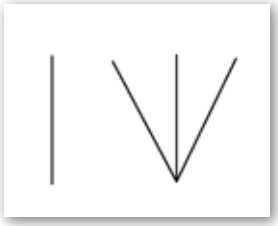
Sign No.4-Composites



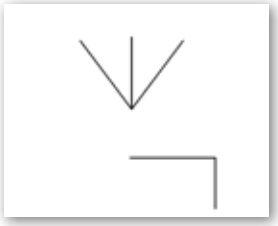
Sign No. 4.1C



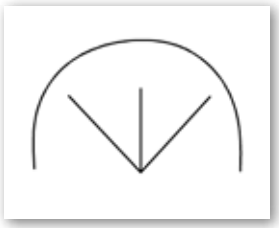
Sign No. 4.2C



Sign No. 4.3C



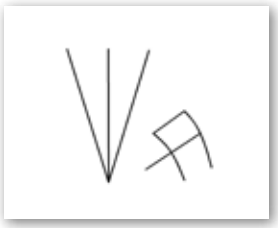
Sign No. 4.4C



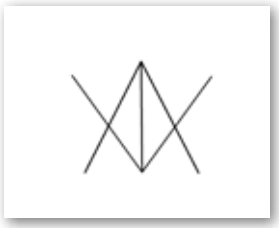
Sign No. 4.5C

Sign No. 4.6C

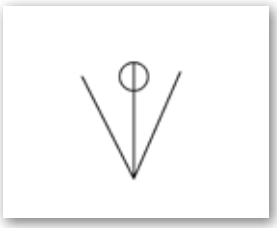
Sign No. 4.7C



Sign No. 4.8C



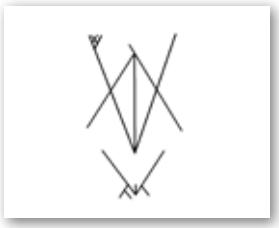
Sign No. 4.9C



Sign No. 4.10C

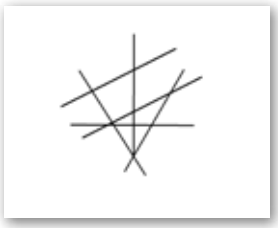
Sign No. 4.11C

Sign No. 4.12C

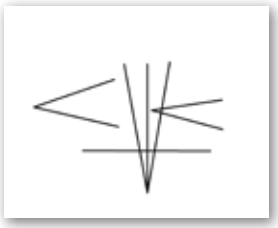


Sign No. 4.13C

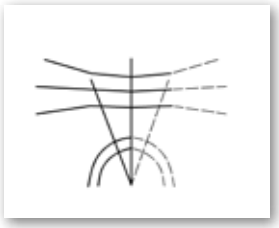
Sign No. 4.14C



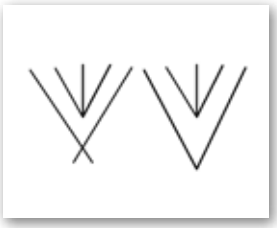
Sign No. 4.15C



Sign No. 4.16C



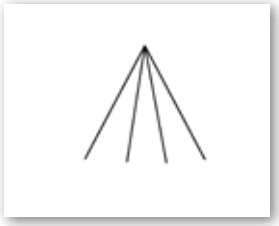
Sign No. 4.17C



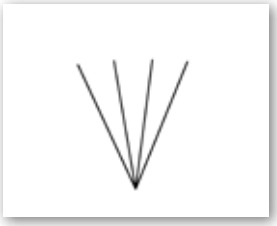
Sign No. 4.18C

Sign No. 4.19C

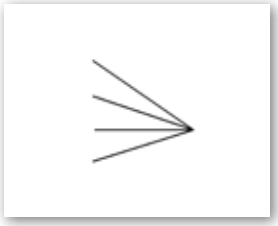
Sign No.5-Base & Its Variants



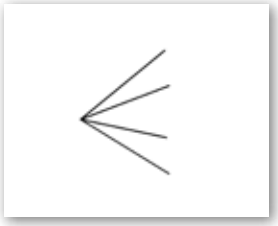
Sign No. 5.0



Sign No. 5.1



Sign No. 5.2

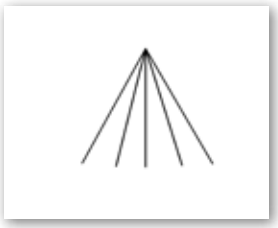


Sign No. 5.3

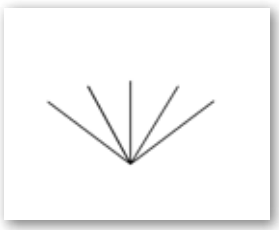
Sign No. 5.4

Sign No. 5.5

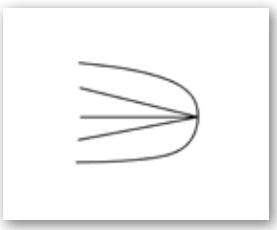
Sign No. 5.6



Sign No. 5.7

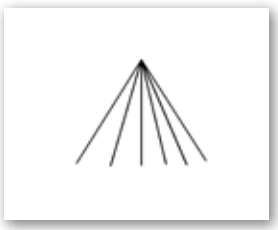


Sign No. 5.8



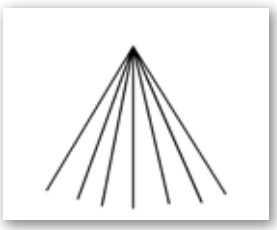
Sign No. 5.9

Sign No. 5.10

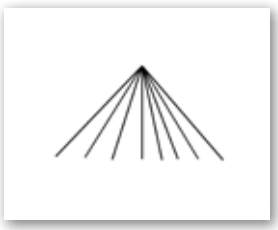


Sign No. 5.11

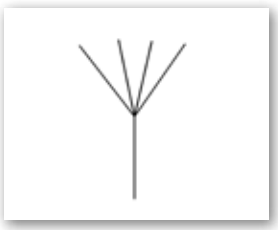
Sign No. 5.12



Sign No. 5.13



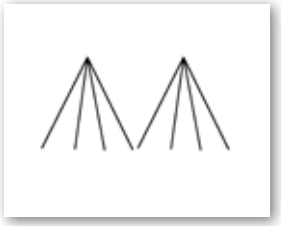
Sign No. 5.14



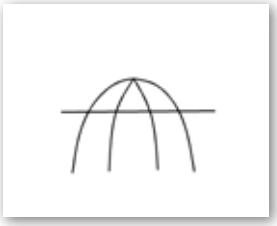
Sign No. 5.15

Sign No. 5.16

Sign No.5-Composites



Sign No. 5.1C

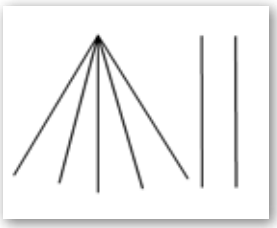


Sign No. 5.2C

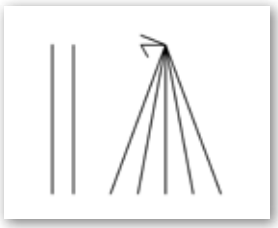
Sign No. 5.3C

Sign No. 5.4C

Sign No. 5.5C



Sign No. 5.6C

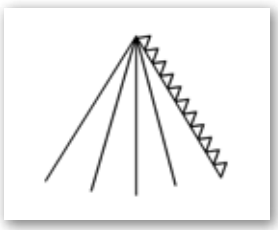


Sign No. 5.7C

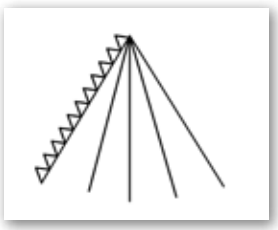
Sign No. 5.8C

Sign No. 5.9C

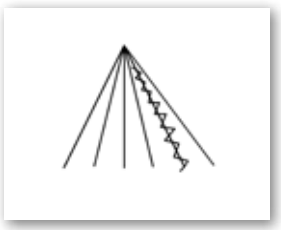
Sign No. 5.10C



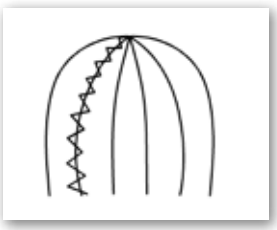
Sign No. 5.11C



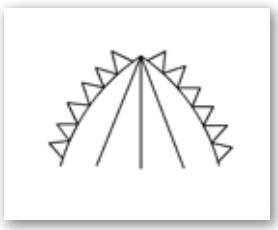
Sign No. 5.12C



Sign No. 5.13C



Sign No. 5.14C



Sign No. 5.15C

Sign No. 5.16C

Sign No. 5.17C

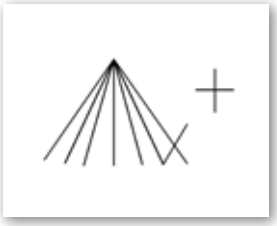
Sign No. 5.18C

Sign No. 5.19C

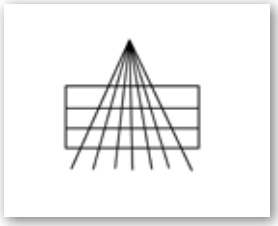
Sign No. 5.20C

Sign No.5-Composites

Sign No. 5.21C



Sign No. 5.22C



Sign No. 5.23C

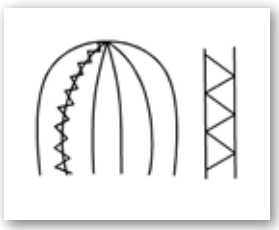
Sign No. 5.24C

Sign No. 5.25C

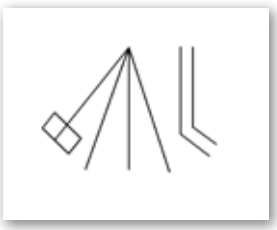
Sign No. 5.26C

Sign No. 5.27C

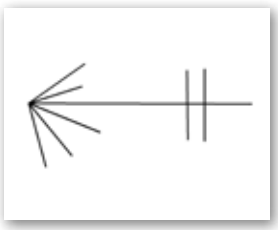
Sign No. 5.28C



Sign No. 5.29C

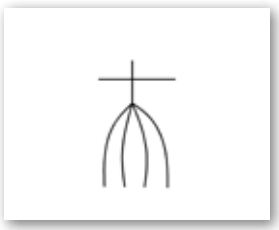


Sign No. 5.30C



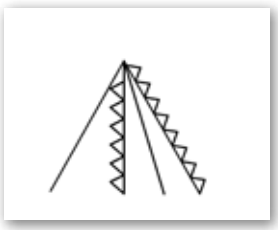
Sign No. 5.31C

Sign No. 5.32C



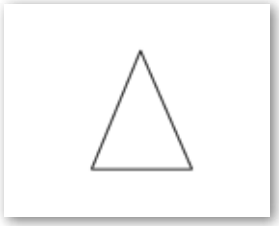
Sign No. 5.33C

Sign No. 5.34C

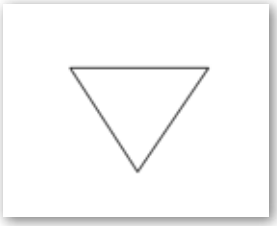


Sign No. 5.35C

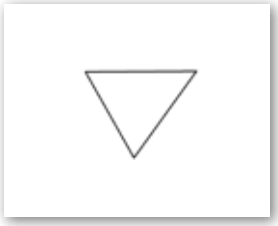
Sign No.6-Base & Its Variants



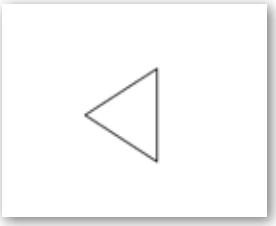
Sign No. 6.0



Sign No. 6.1



Sign No. 6.2



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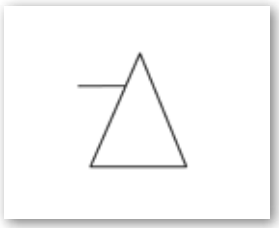

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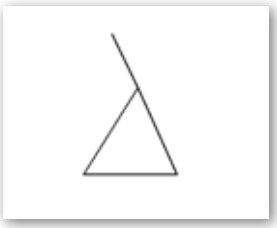
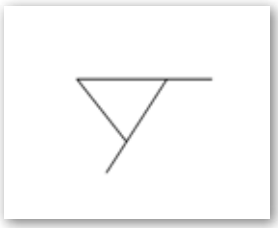
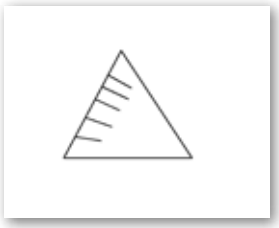


Sign No. 6.5



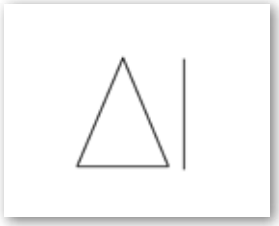
Sign No. 6.6

Sign No. 6.7



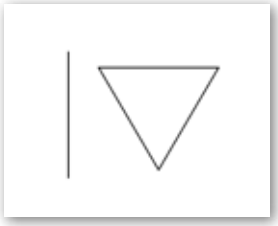
Sign No. 6.8

Sign No.6-Composites



Sign No. 6.1C

Sign No. 6.2C



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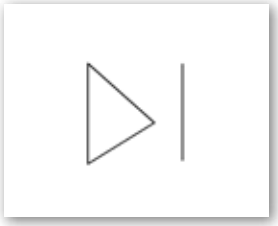
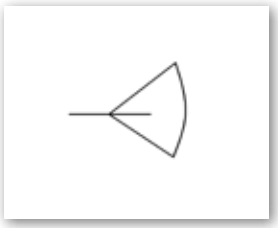


Sign No. 6.4C

Sign No. 6.5C

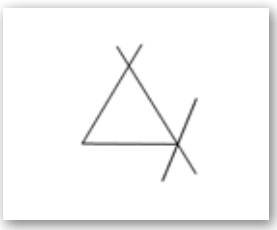
Sign No. 6.6C

Sign No. 6.7C



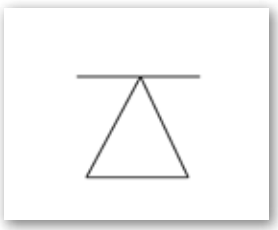
Sign No. 6.8C

Sign No. 6.9C



Sign No. 6.10C

Sign No. 6.11C



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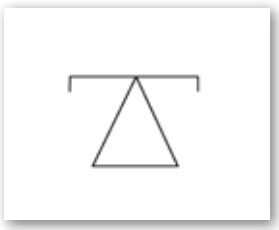

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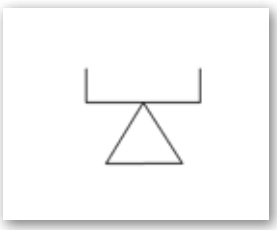

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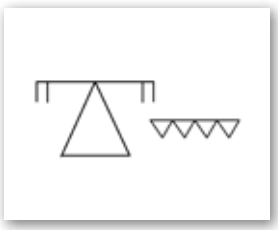
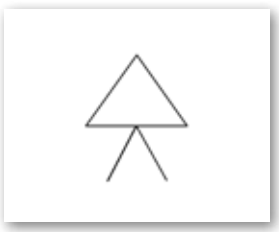


Sign No. 6.15C

Sign No. 6.16C



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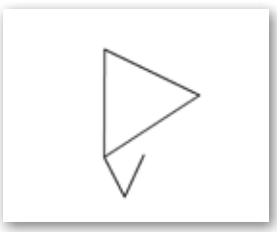

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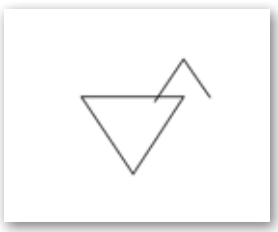
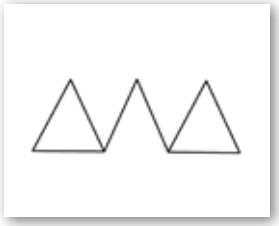


Sign No. 6.19C

Sign No. 6.20C

Sign No.6-Composites



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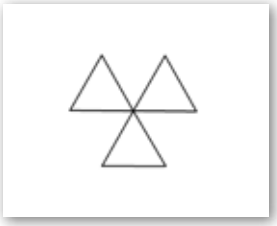
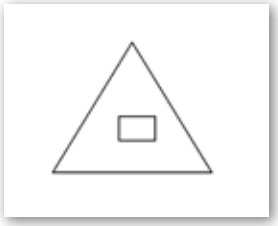


Sign No. 6.22C

Sign No. 6.23C



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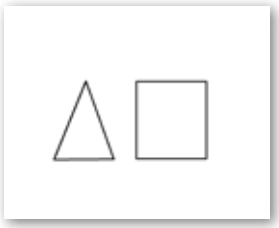

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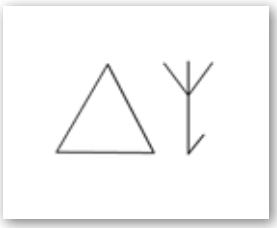

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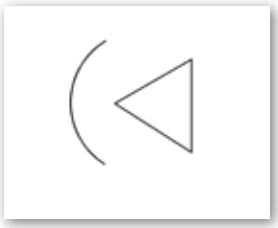

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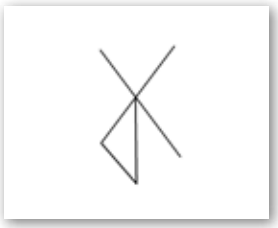

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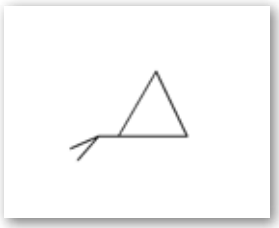

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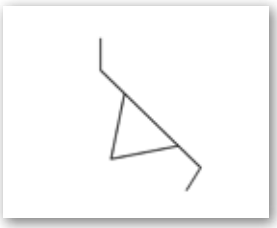
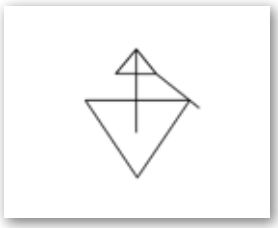
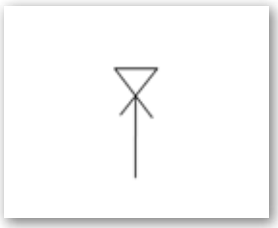


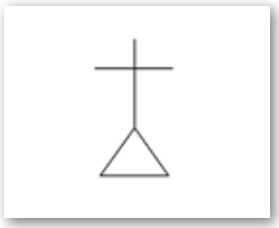
Sign No. 6.30C



Sign No. 6.31C



Sign No. 6.32C



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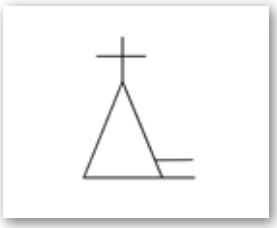
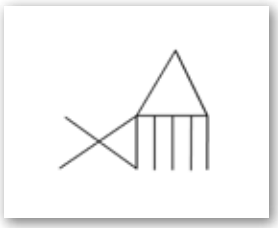


Sign No. 6.34C

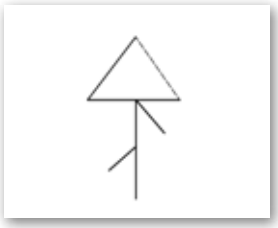
Sign No. 6.35C



Sign No. 6.36C

Sign No. 6.37C

Sign No. 6.38C



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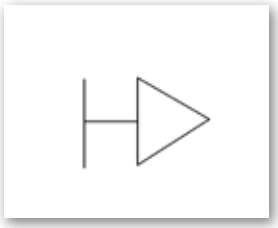
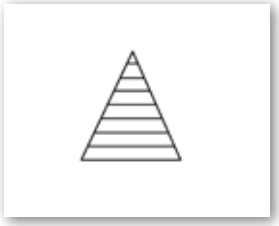


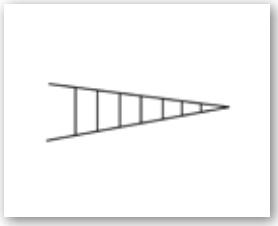
Sign No. 6.40C

Sign No.7-Base & Its Variants

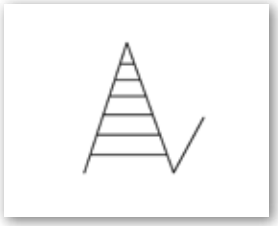


Sign No. 7.0

Sign No. 7.1



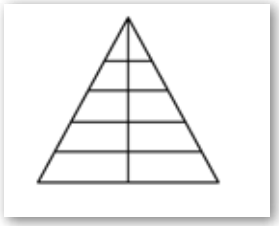
Sign No. 7.2



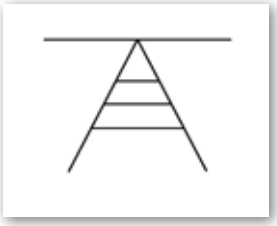
Sign No. 7.3

Sign No. 7.4

Sign No.7-Composites

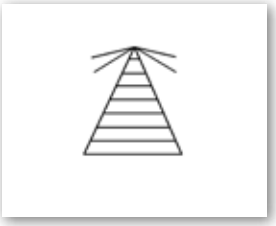


Sign No. 7.1C

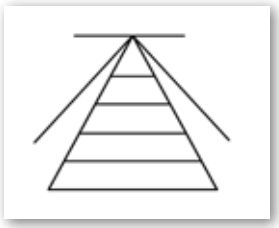


Sign No. 7.2C

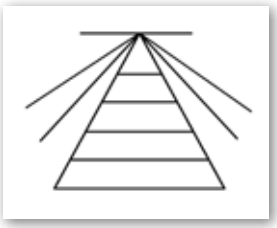
Sign No. 7.3C



Sign No. 7.4C



Sign No. 7.5C



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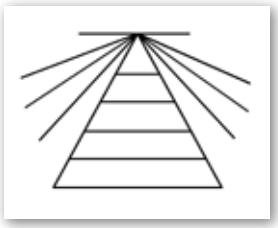
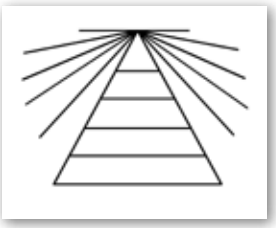
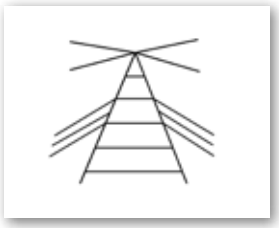


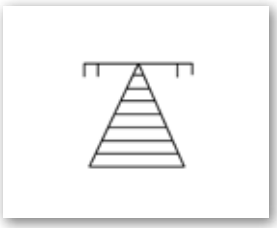
Sign No. 7.7C



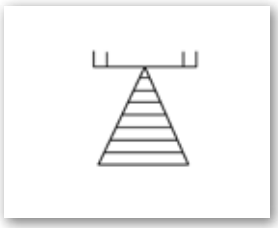
Sign No. 7.8C



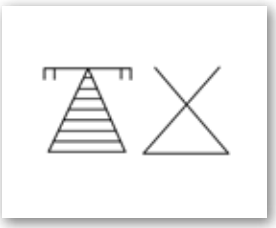
Sign No. 7.9C



Sign No. 7.10C

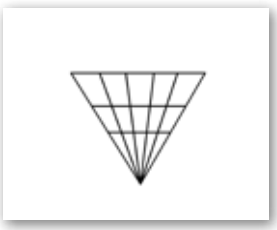


Sign No. 7.11C

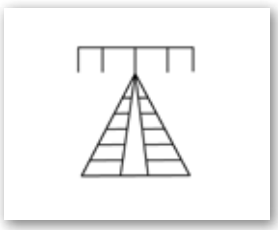


Sign No. 7.12C

Sign No. 7.13C



Sign No. 7.14C



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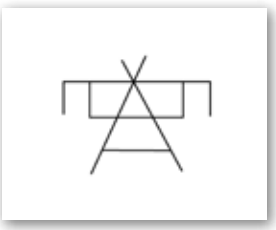

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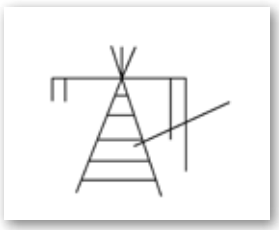


Sign No. 7.17C

Sign No. 7.18C

Sign No. 7.19C

Sign No. 7.20C

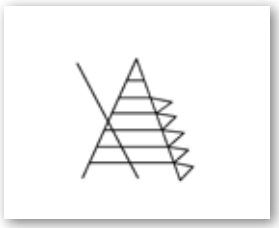
Sign No.7-Composites

Sign No. 7.21C

Sign No. 7.22C

Sign No. 7.23C

Sign No. 7.24C



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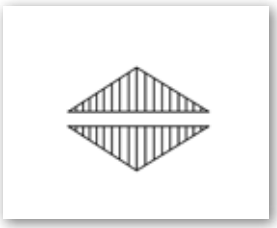

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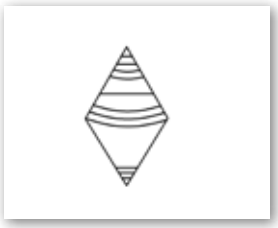

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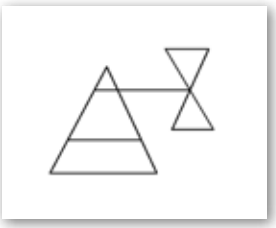

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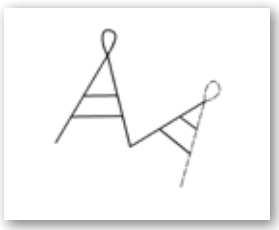


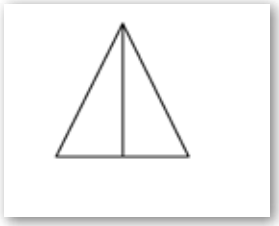
Sign No. 7.29C

Sign No. 7.30C

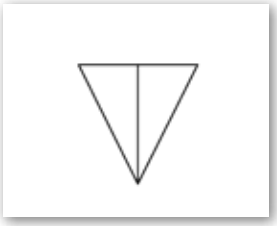
Sign No. 7.31C

Sign No. 7.32C

Sign No.8-Base & Its Variants



Sign No. 8.0



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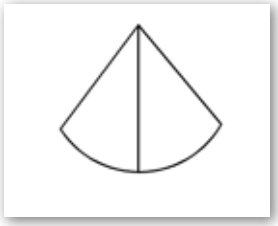

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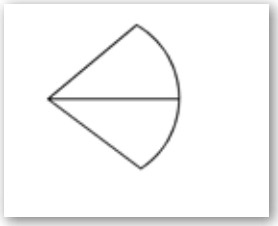

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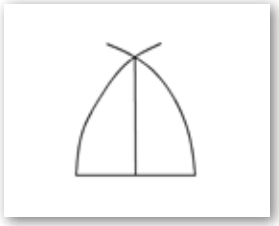
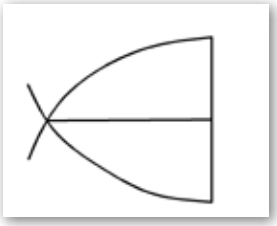
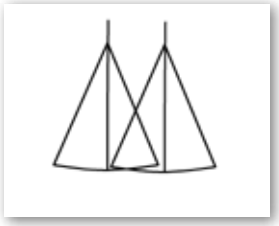


Sign No. 8.4

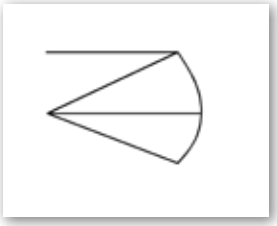


Sign No. 8.5

Sign No.8-Composites



Sign No. 8.1C



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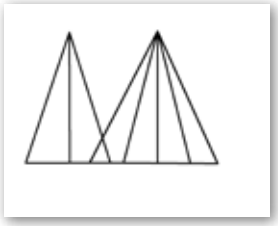

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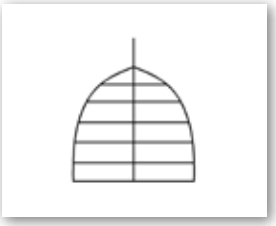
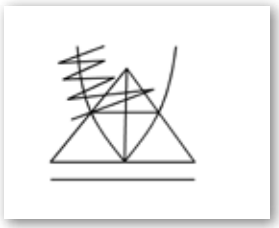


Sign No. 8.4C



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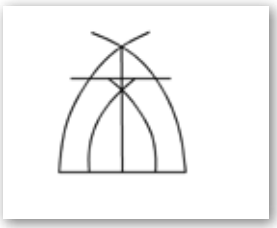
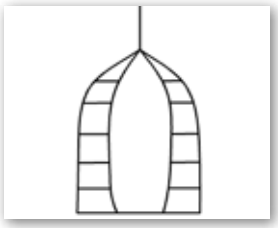
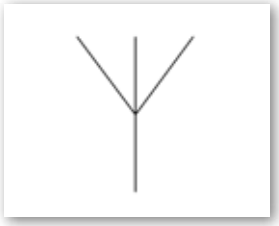


Sign No. 8.6C

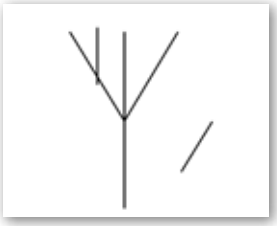


Sign No. 8.7C

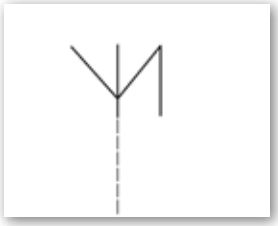
Sign No.9-Base & Its Varients



Sign No. 9.0



Sign No. 9.1



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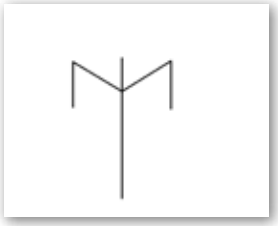

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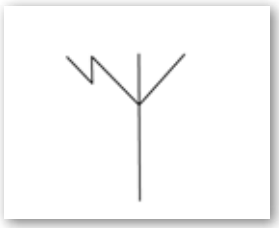

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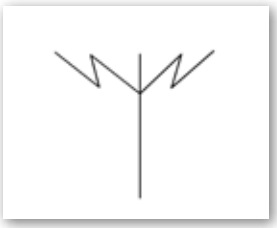

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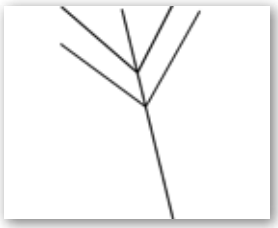
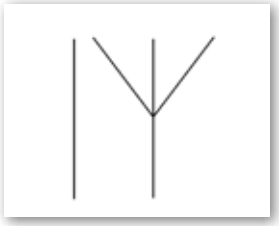


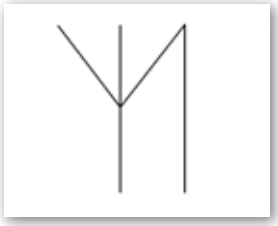
Sign No. 9.6

Sign No.9-Composites



Sign No. 9.1C

Sign No. 9.2C



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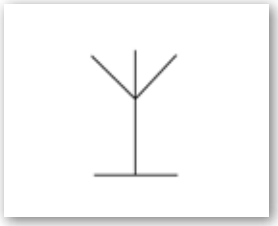

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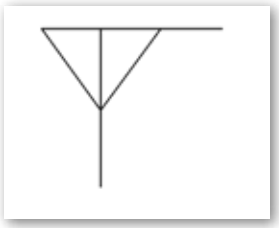

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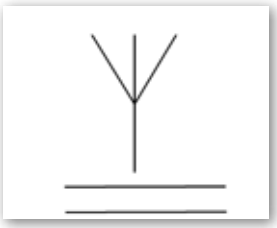

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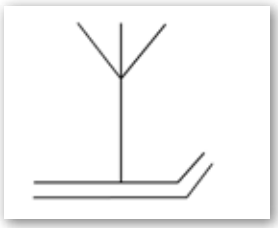

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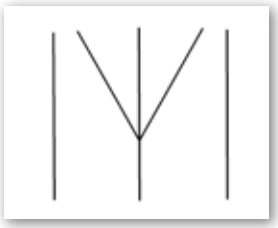

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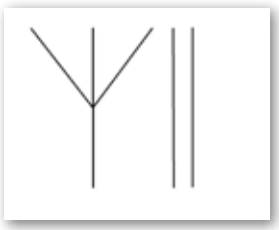


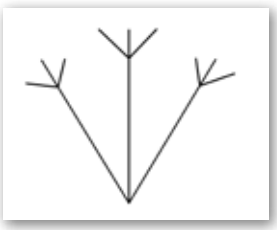
Sign No. 9.9C

Sign No. 9.10C

Sign No. 9.11C

Sign No. 9.12C

Sign No. 9.13C



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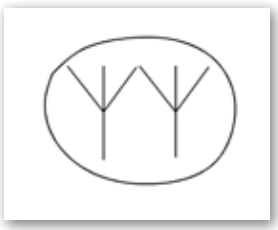

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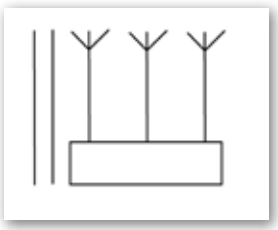

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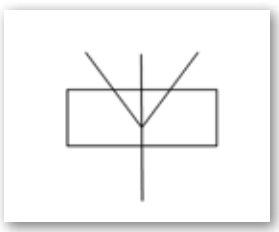

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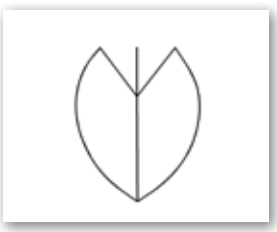
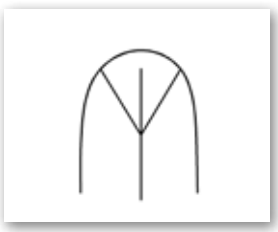
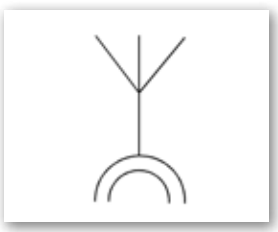


Sign No. 9.18C

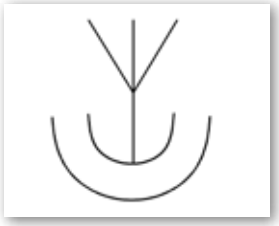


Sign No. 9.19C



Sign No. 9.20C

Sign No.9-Composites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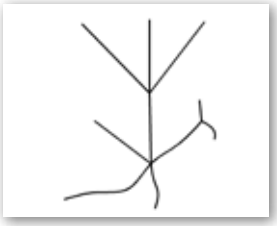
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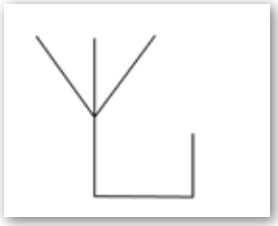
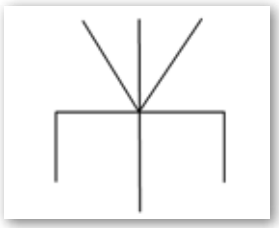

Sign No. 9.23C

Sign No. 9.24C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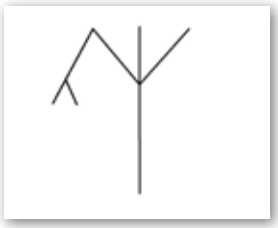
Sign No. 9.26C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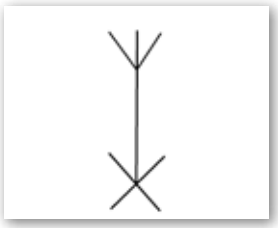
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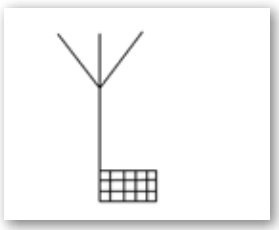
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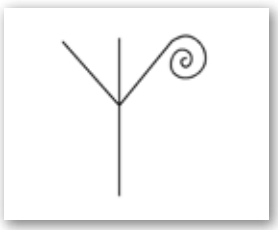
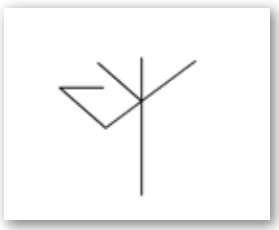
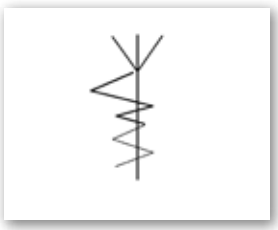
Sign No. 9.30C

Sign No. 9.31C


Sign No. 9.32C


Sign No. 9.33C

Sign No. 9.34C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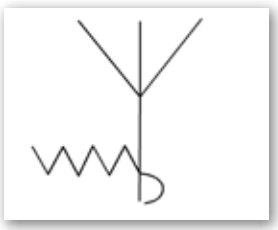
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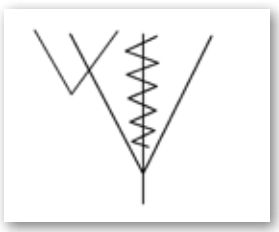
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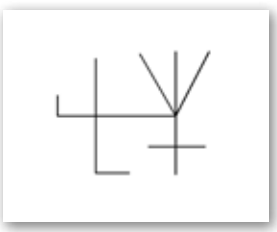
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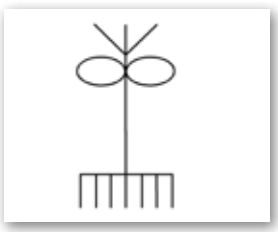
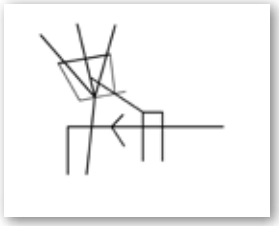
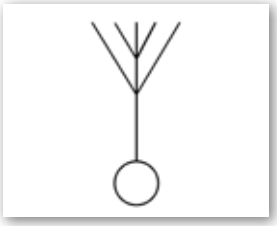

Sign No. 9.39C

Sign No. 9.40C

Sign No.9-Composites

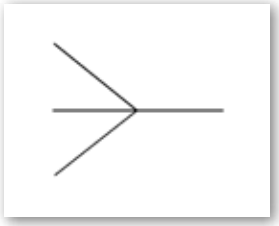


Sign No. 9.41C

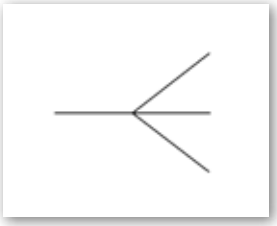


Sign No. 9.42C

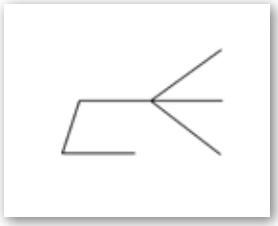
Sign No.10-Base & Its Variants



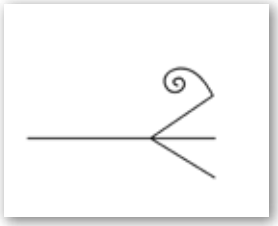
Sign No. 10.0



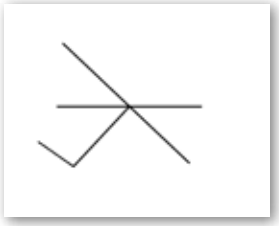
Sign No. 10.1



Sign No. 10.2

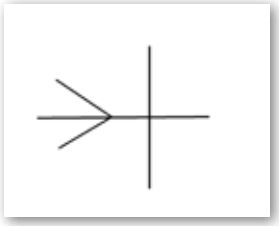


Sign No. 10.3

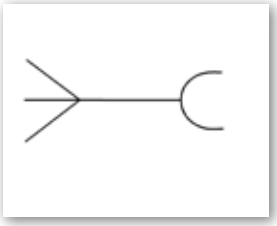


Sign No. 10.4

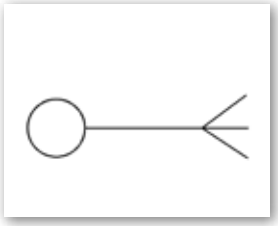
Sign No.10-Composites



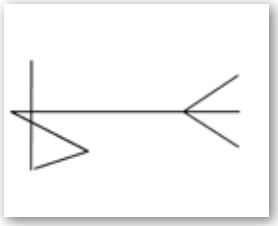
Sign No. 10.1C



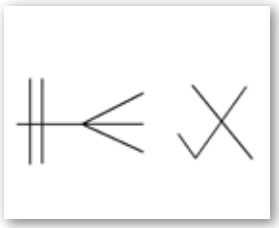
Sign No. 10.2C



Sign No. 10.3C

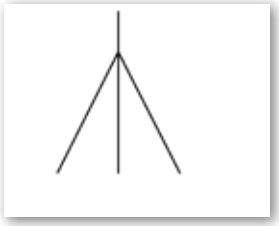


Sign No. 10.4C

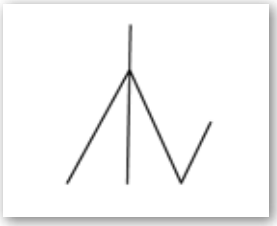


Sign No. 10.5C

Sign No.11-Base & Its Varients

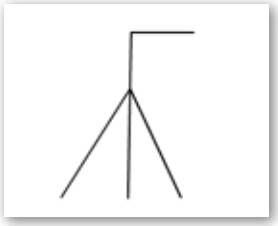


Sign No. 11.0



Sign No. 11.1

Sign No. 11.2



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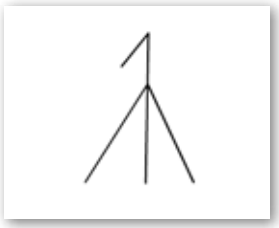

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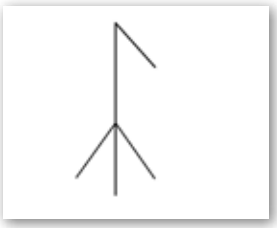

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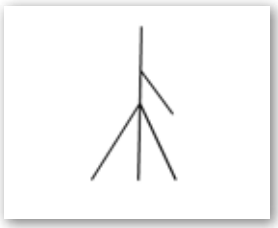

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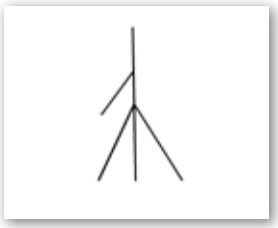
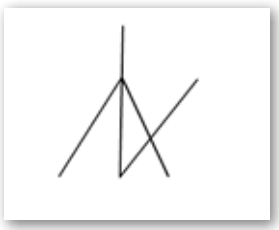


Sign No. 11.7



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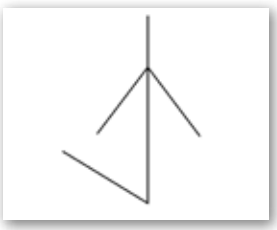
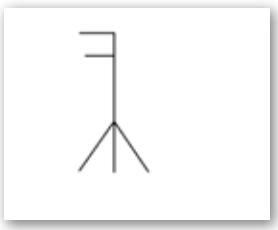
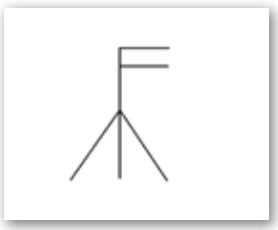


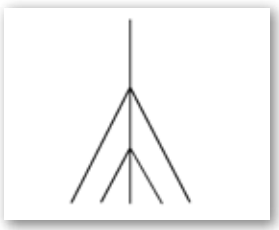
Sign No. 11.9



Sign No. 11.10

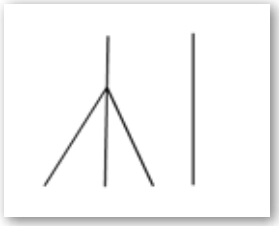


Sign No. 11.11

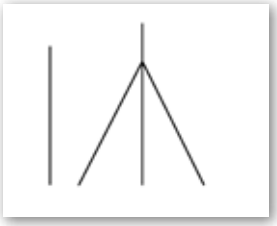


Sign No. 11.12

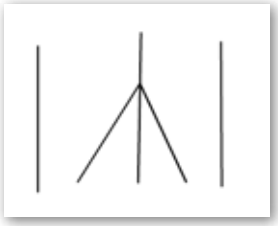
Sign No.11-Composites



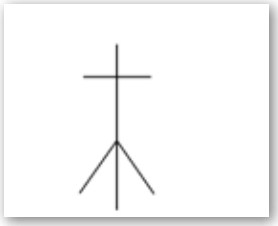
Sign No. 11.1C



Sign No. 11.2C



Sign No. 11.3C



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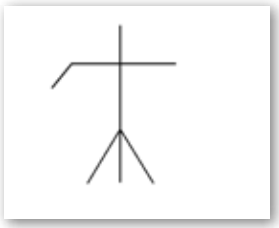

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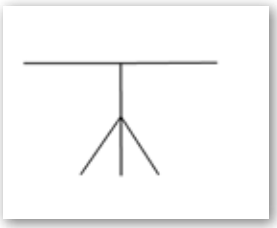

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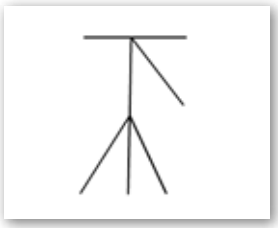
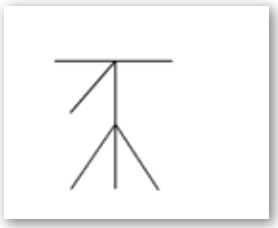
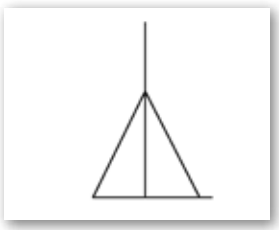


Sign No. 11.7C

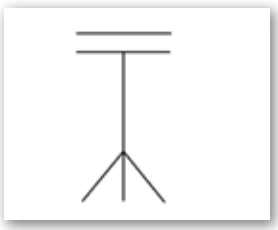


Sign No. 11.8C

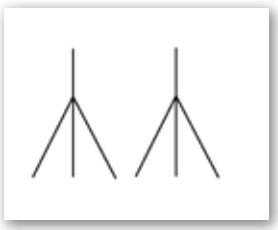


Sign No. 11.9C

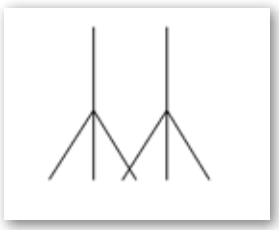
Sign No. 11.10C



Sign No. 11.11C



Sign No. 11.12C



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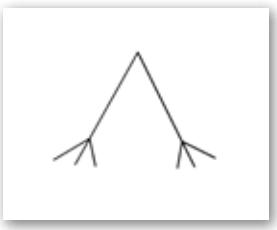
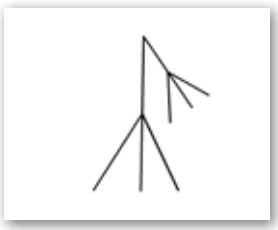
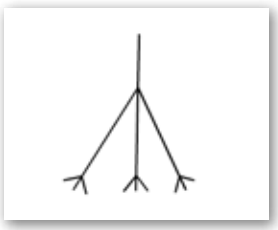


Sign No. 11.14C

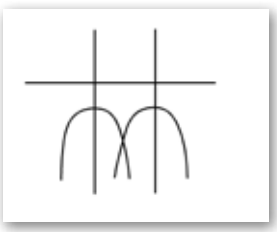


Sign No. 11.15C

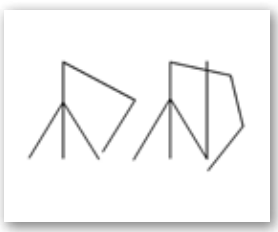


Sign No. 11.16C

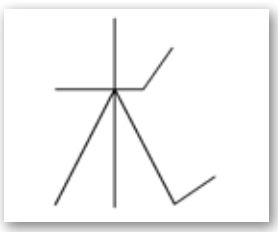
Sign No. 11.17C



Sign No. 11.18C

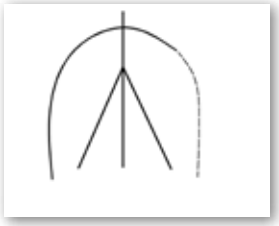


Sign No. 11.19C

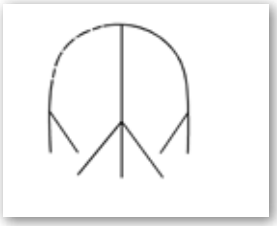


Sign No. 11.20C

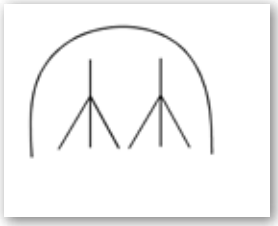
Sign No.11-Composites



Sign No. 11.21C

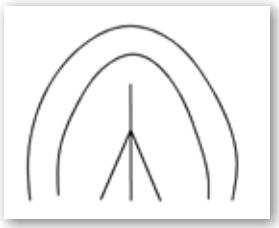


Sign No. 11.22C

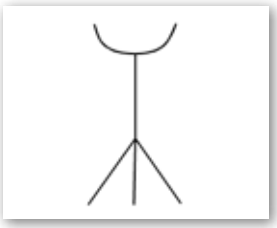


Sign No. 11.23C

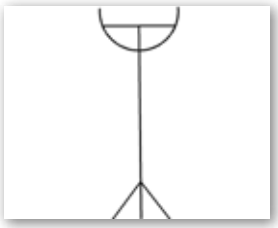
Sign No. 11.24C



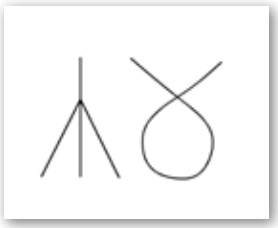
Sign No. 11.25C



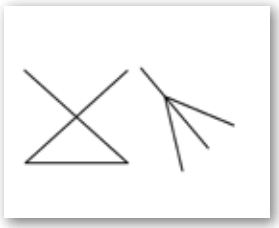
Sign No. 11.26C



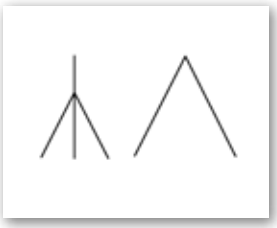
Sign No. 11.27C



Sign No. 11.28C

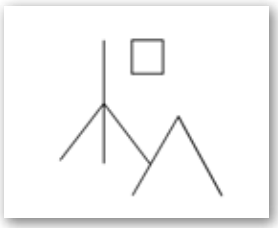


Sign No. 11.29C

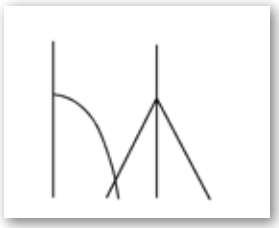


Sign No. 11.30C

Sign No. 11.31C

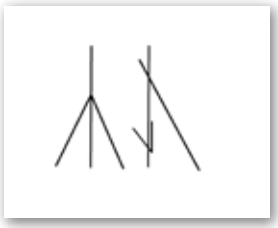


Sign No. 11.32C



Sign No. 11.33C

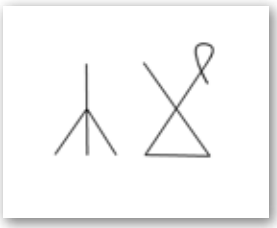
Sign No. 11.34C



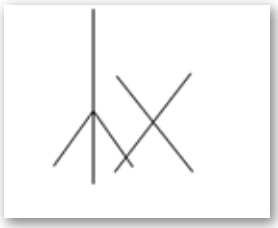
Sign No. 11.35C

Sign No. 11.36C

Sign No. 11.37C



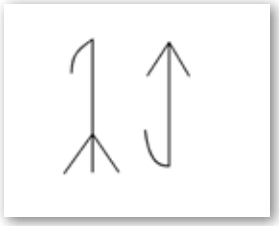
Sign No. 11.38C



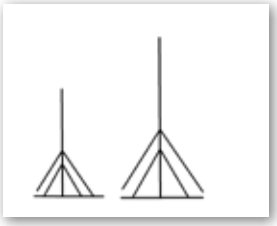
Sign No. 11.39C

Sign No. 11.40C

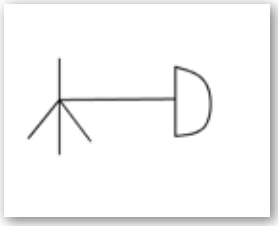
Sign No.11-Composites



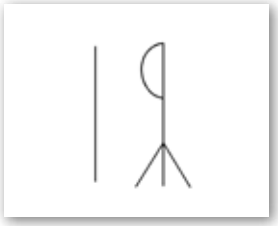
Sign No. 11.41C



Sign No. 11.42C

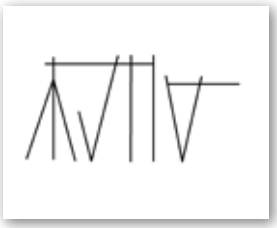


Sign No. 11.43C



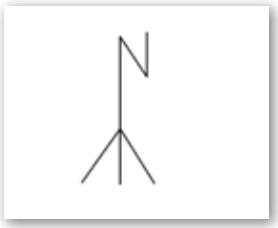
Sign No. 11.44C

Sign No. 11.45C



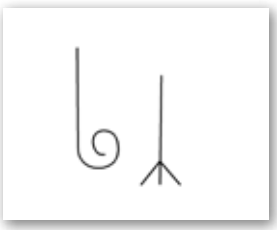
Sign No. 11.46C

Sign No. 11.47C

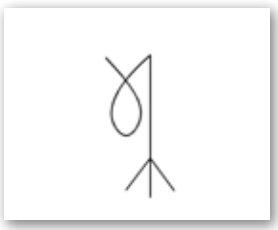


Sign No. 11.48C

Sign No. 11.49C

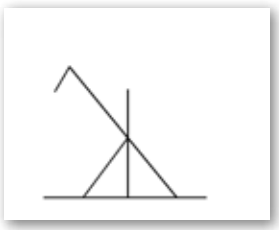


Sign No. 11.50C



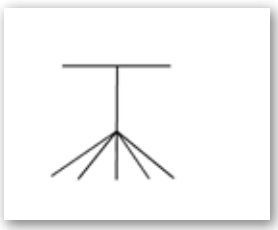
Sign No. 11.51C

Sign No. 11.52C

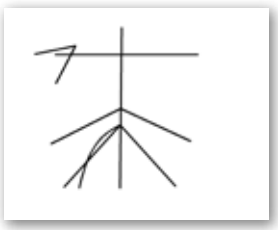


Sign No. 11.53C

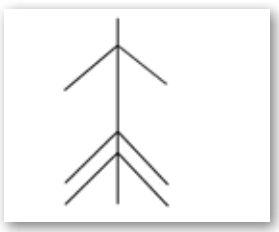
Sign No. 11.54C



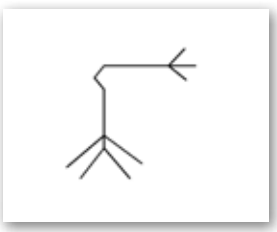
Sign No. 11.55C



Sign No. 11.56C

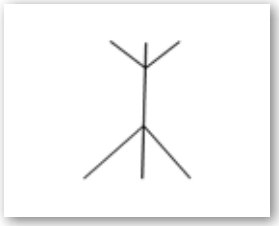


Sign No. 11.57C

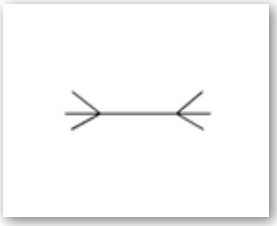


Sign No. 11.58C

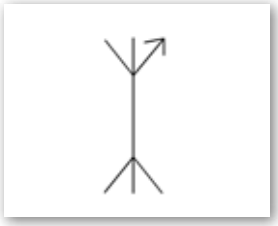
Sign No.12-Base & Its Varients



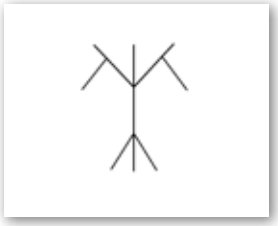
Sign No. 12.0



Sign No. 12.1

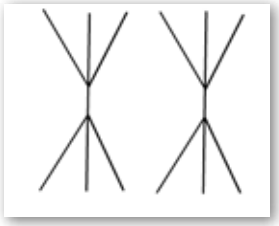


Sign No. 12.2

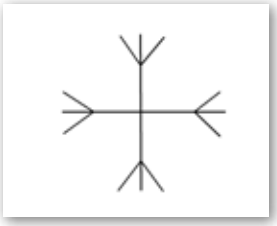


Sign No. 12.3

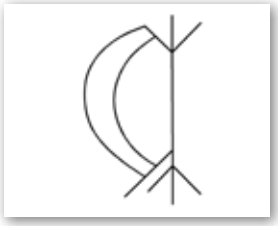
Sign No.12-Composites



Sign No. 12.1C

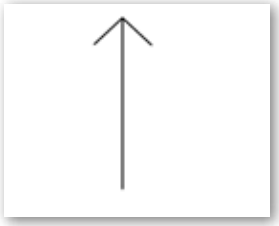


Sign No. 12.2C

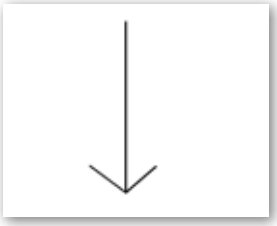


Sign No. 12.3C

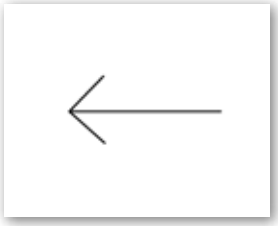
Sign No.13-Base & Its Varients



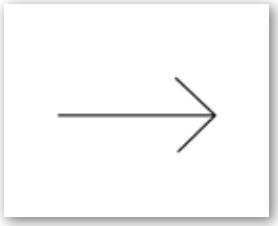
Sign No. 13.0



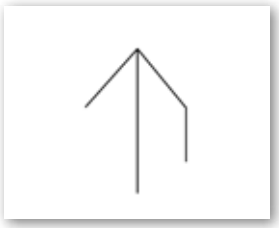
Sign No. 13.1



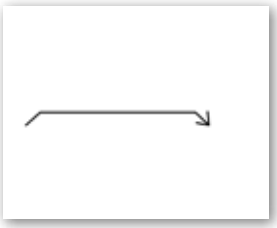
Sign No. 13.2



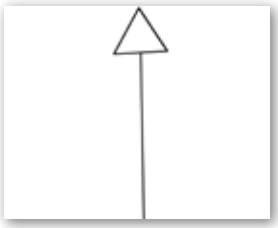
Sign No. 13.3



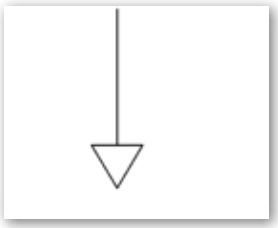
Sign No. 13.4



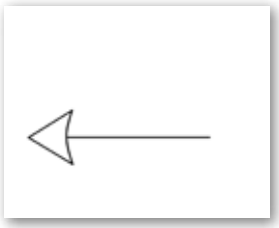
Sign No. 13.5



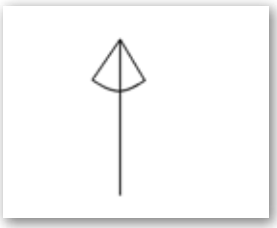
Sign No. 13.6



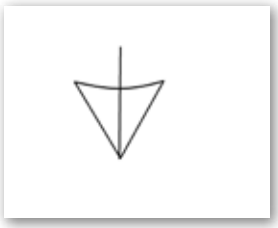
Sign No. 13.7



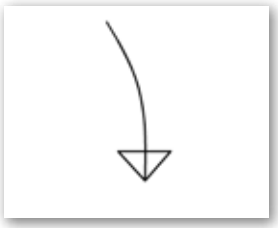
Sign No. 13.8



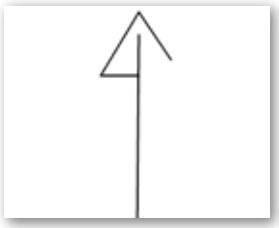
Sign No. 13.9



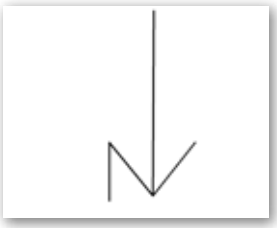
Sign No. 13.10



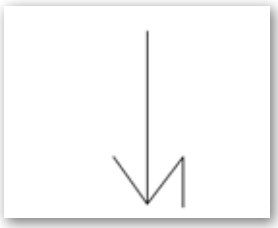
Sign No. 13.11



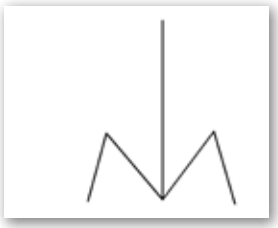
Sign No. 13.12



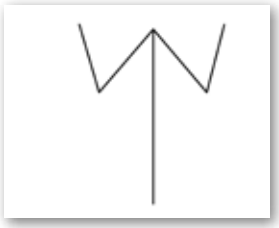
Sign No. 13.13



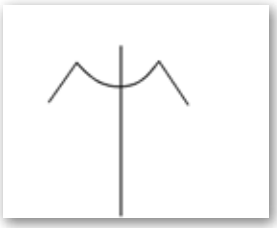
Sign No. 13.14



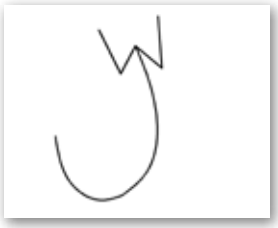
Sign No. 13.15



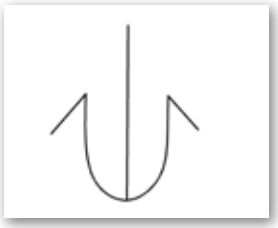
Sign No. 13.16



Sign No. 13.17

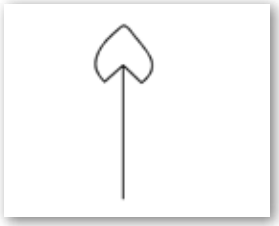


Sign No. 13.18

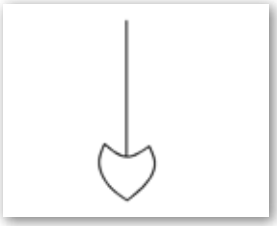


Sign No. 13.19

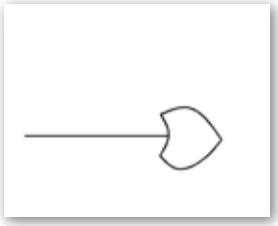
Sign No.13-Base & Its Varients



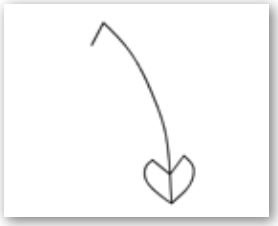
Sign No. 13.20



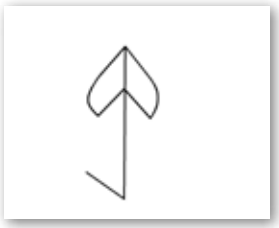
Sign No. 13.21



Sign No. 13.22

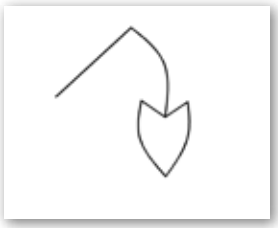


Sign No. 13.23

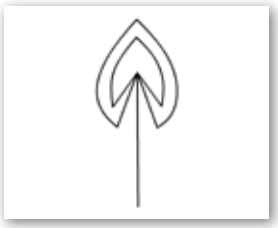


Sign No. 13.24

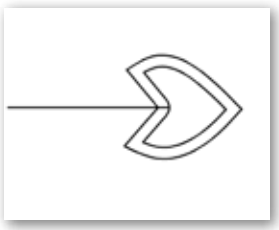
Sign No. 13.25



Sign No. 13.26



Sign No. 13.27



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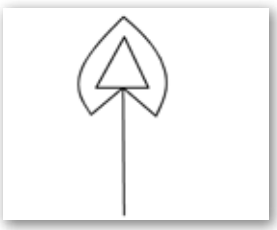
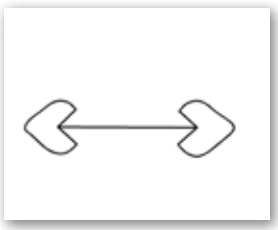
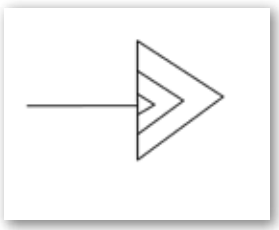


Sign No. 13.29



Sign No. 13.30

Sign No. 13.31



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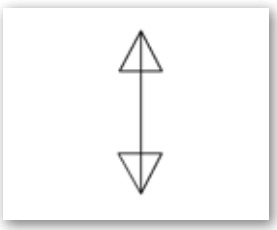
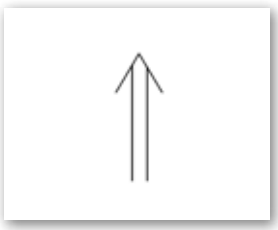
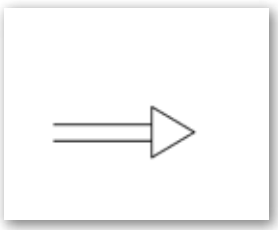


Sign No. 13.33

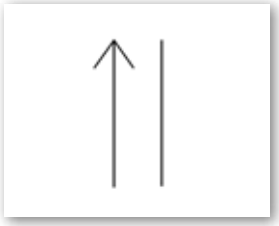


Sign No. 13.34

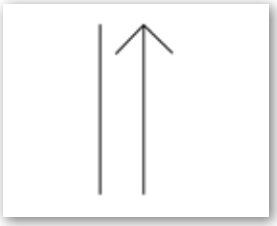


Sign No. 13.35

Sign No.13-Composites



Sign No. 13.1C



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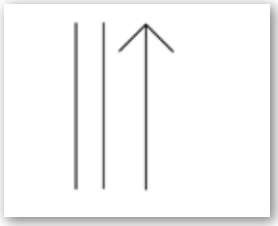
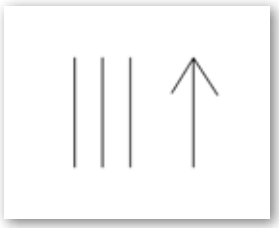


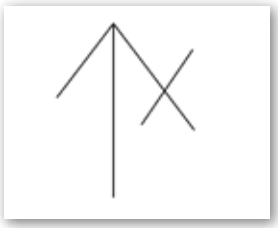
Sign No. 13.3C

Sign No. 13.4C



Sign No. 13.5C

Sign No. 13.6C



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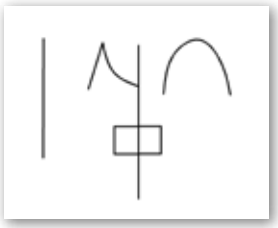

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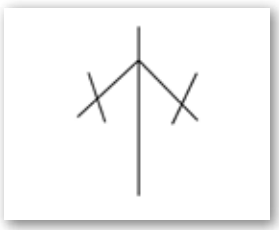

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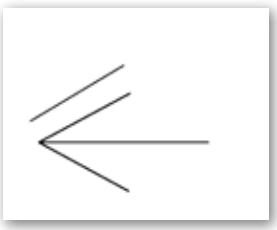
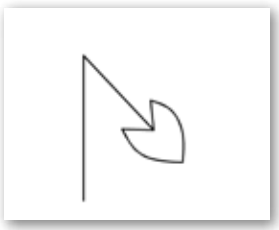


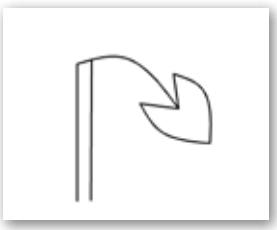
Sign No. 13.10C

Sign No. 13.11C

Sign No. 13.12C

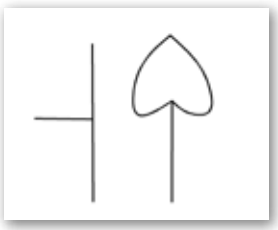


Sign No. 13.13C



Sign No. 13.14C

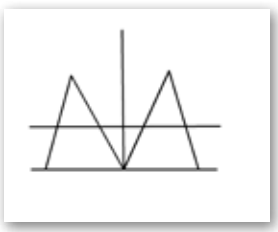
Sign No. 13.15C



Sign No. 13.16C

Sign No. 13.17C

Sign No. 13.18C



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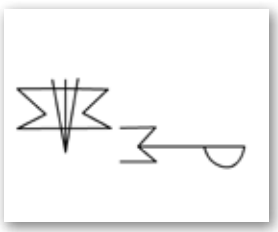
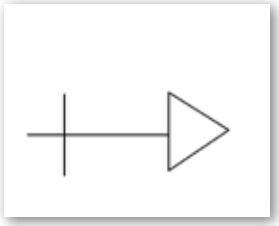


Sign No. 13.20C

Sign No.13-Composites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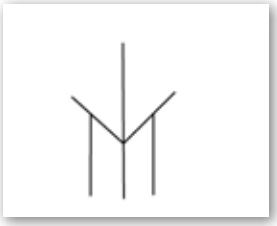
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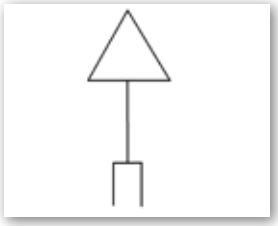
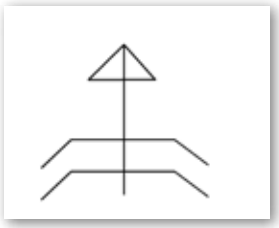

Sign No. 13.23C

Sign No. 13.24C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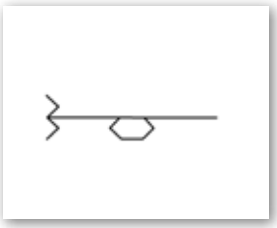
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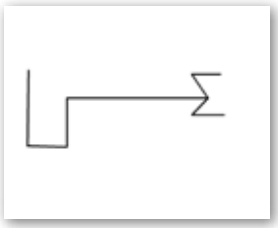
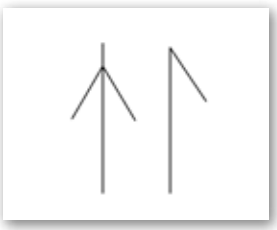

Sign No. 13.27C

Sign No. 13.28C

Sign No. 13.29C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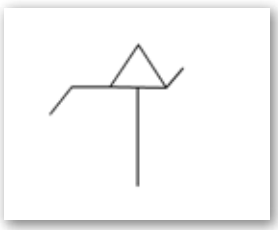
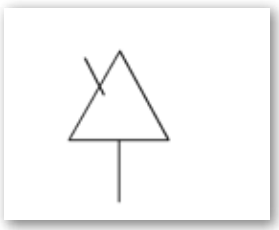
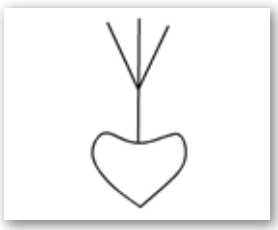

Sign No. 13.31C

Sign No. 13.32C


Sign No. 13.33C

Sign No. 13.34C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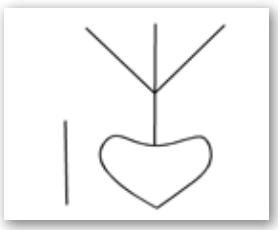
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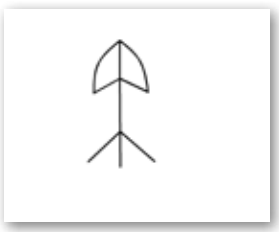
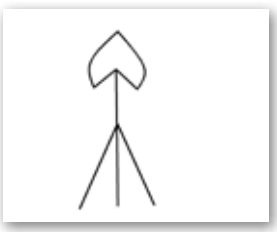
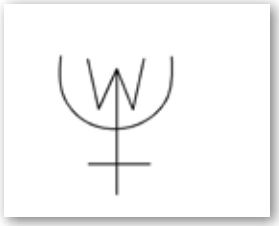

Sign No. 13.37C


Sign No. 13.38C

Sign No. 13.39C

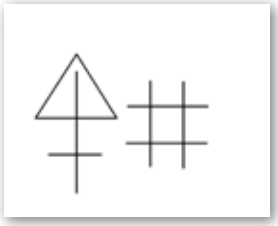
Sign No. 13.40C

Sign No.13-Composites

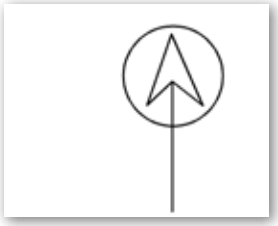


Sign No. 13.41C

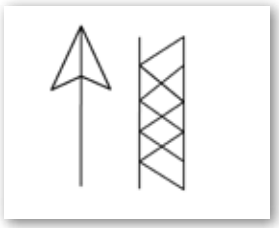
Sign No. 13.42C



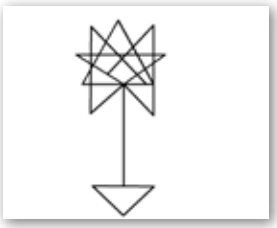
Sign No. 13.43C



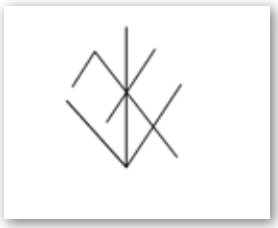
Sign No. 13.44C



Sign No. 13.45C

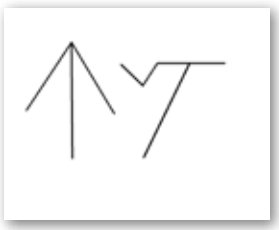


Sign No. 13.46C



Sign No. 13.47C

Sign No. 13.48C



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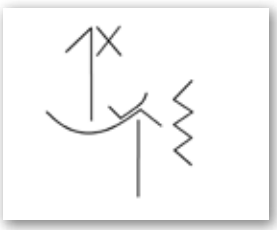
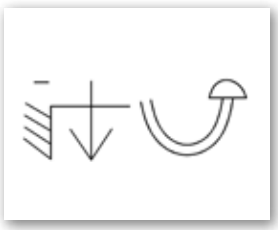
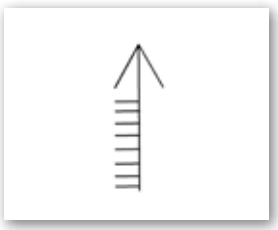


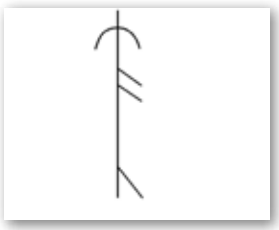
Sign No. 13.50C



Sign No. 13.51C



Sign No. 13.52C



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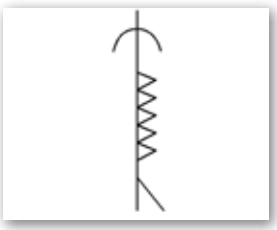
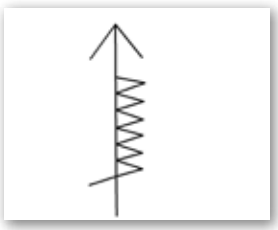
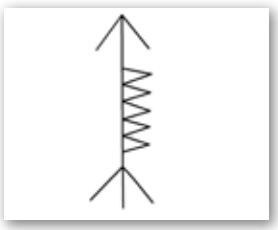


Sign No. 13.54C

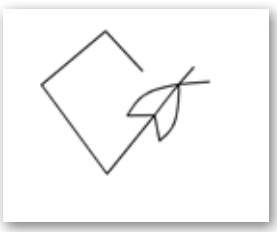


Sign No. 13.55C

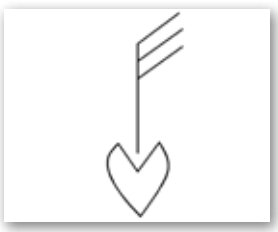


Sign No. 13.56C

Sign No. 13.57C



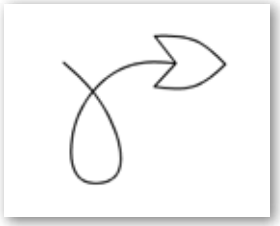
Sign No. 13.58C



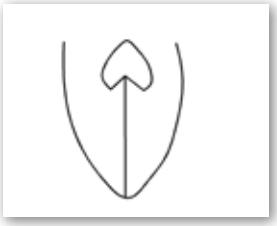
Sign No. 13.59C

Sign No. 13.60C

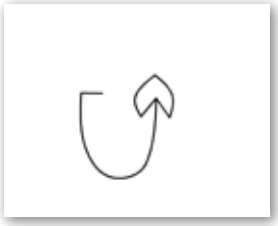
Sign No.13-Composites



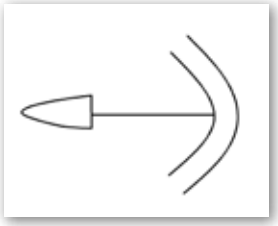
Sign No. 13.61C



Sign No. 13.62C



Sign No. 13.63C



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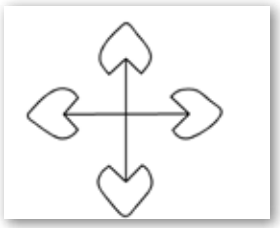
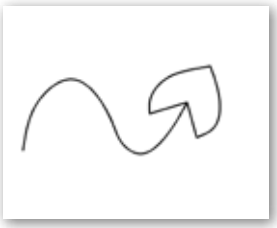
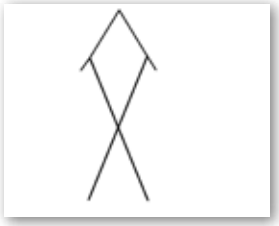


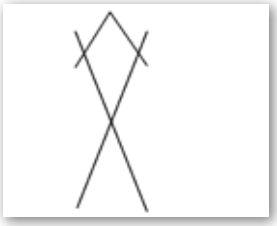
Sign No. 13.65C

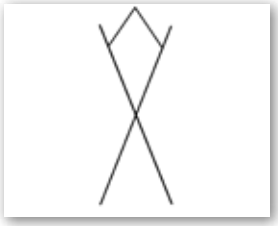


Sign No. 13.66C

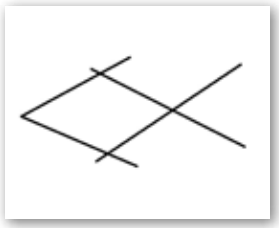
Sign No.14-Base & Its Varients


Sign No. 14.0


Sign No. 14.1


Sign No. 14.2

Sign No. 14.3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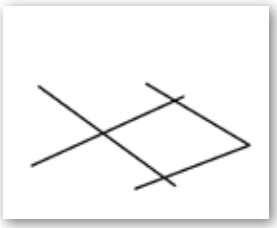
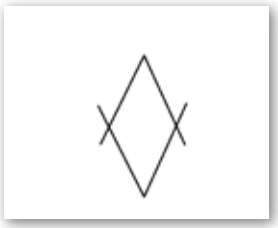

Sign No. 14.5

Sign No. 14.6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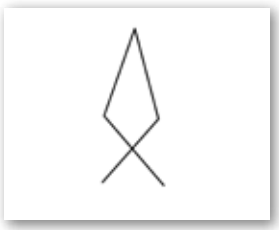
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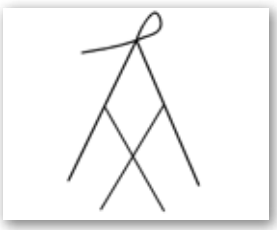
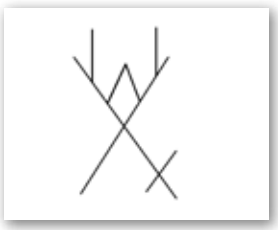

Sign No. 14.9

Sign No. 14.10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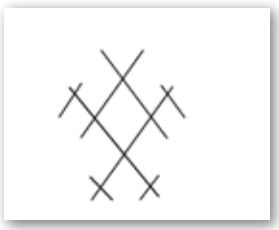
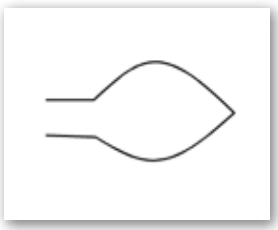

Sign No. 14.12

Sign No. 14.13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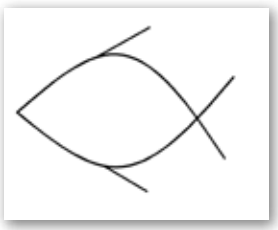
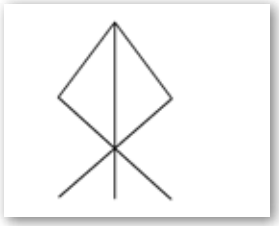
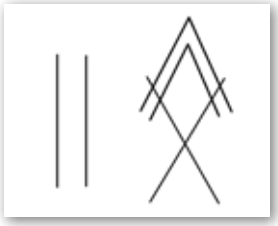

Sign No. 14.15

Sign No.14-Composites



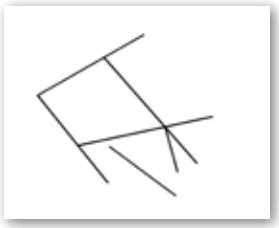
Sign No. 14.1C

Sign No. 14.2C



Sign No. 14.3C

Sign No. 14.4C

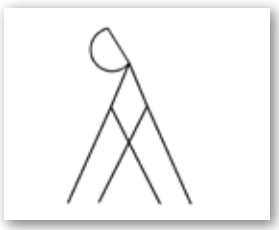


Sign No. 14.5C

Sign No. 14.6C

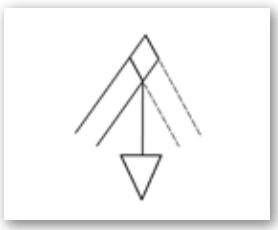
Sign No. 14.7C

Sign No. 14.8C



Sign No. 14.9C

Sign No. 14.10C

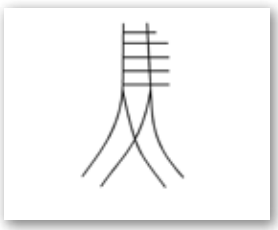


Sign No. 14.11C

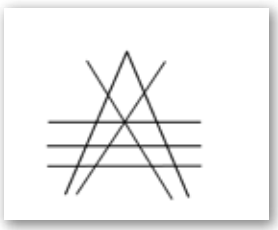
Sign No. 14.12C

Sign No. 14.13C

Sign No. 14.14C

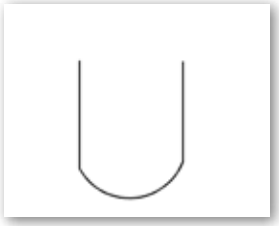


Sign No. 14.15C

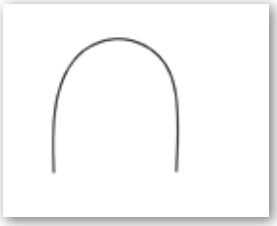


Sign No. 14.16C

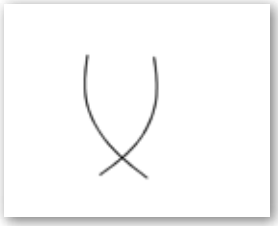
Sign No.15-Base & Its Variants



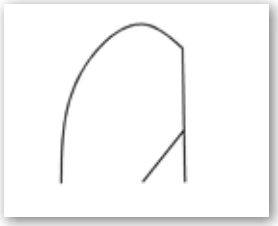
Sign No. 15.0



Sign No. 15.1



Sign No. 15.2



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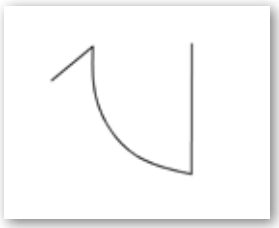
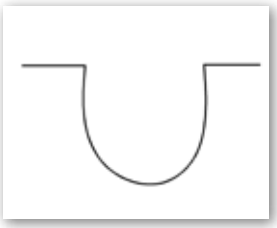


Sign No. 15.4



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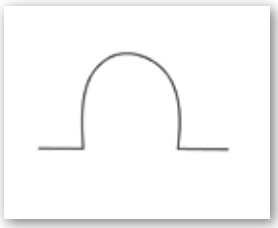
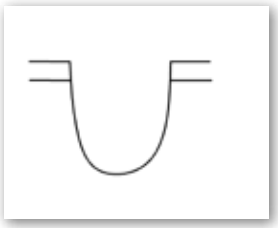
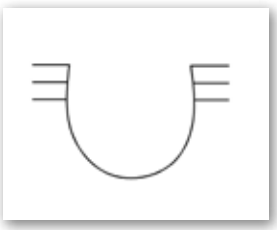


Sign No. 15.6



Sign No. 15.7

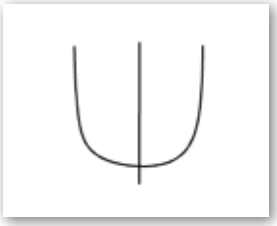
Sign No. 15.8



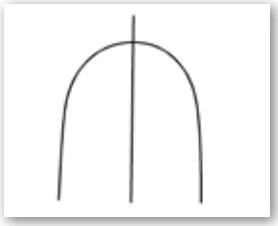
Sign No. 15.9

Sign No.15-Composites

Sign No. 15.1C



Sign No. 15.2C



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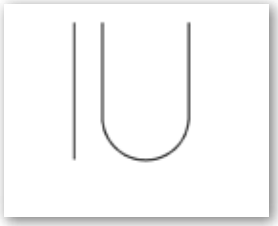

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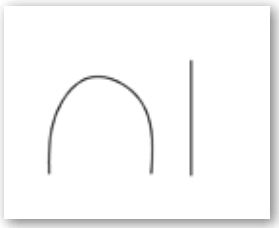

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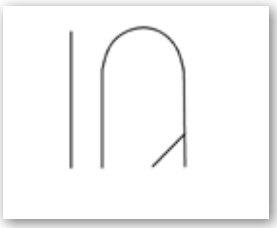
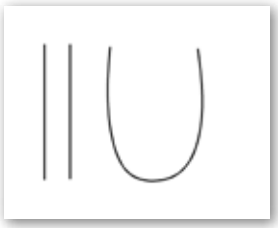
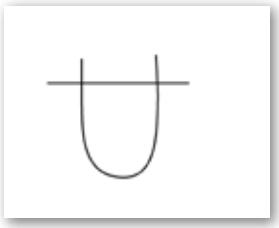


Sign No. 15.6C

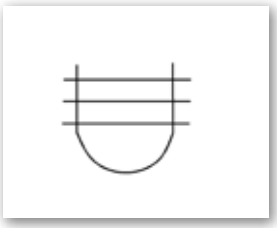


Sign No. 15.7C

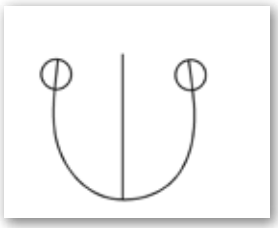
Sign No. 15.8C



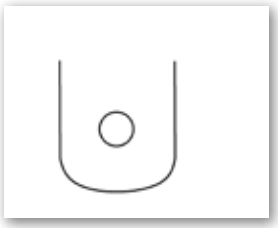
Sign No. 15.9C



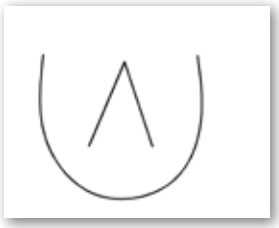
Sign No. 15.10C



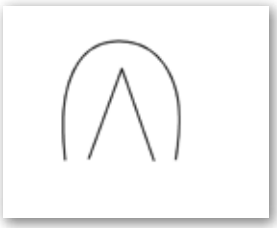
Sign No. 15.11C



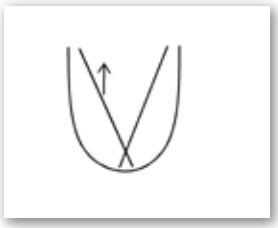
Sign No. 15.12C



Sign No. 15.13C

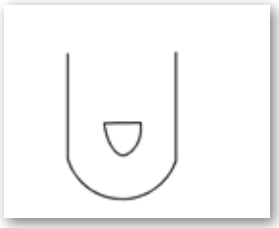


Sign No. 15.14C

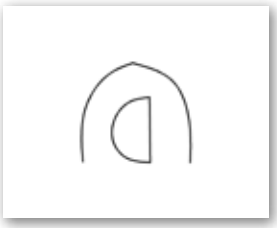


Sign No. 15.15C

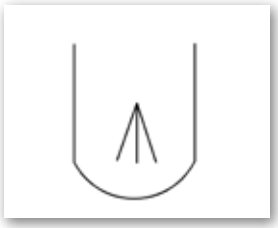
Sign No. 15.16C



Sign No. 15.17C



Sign No. 15.18C

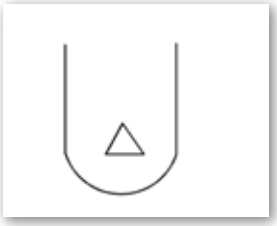


Sign No. 15.19C

Sign No. 15.20C

Sign No.15-Composites

Sign No. 15.21C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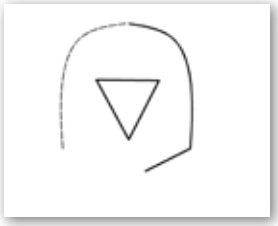
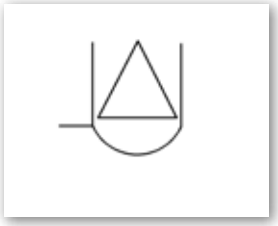
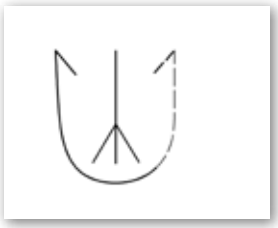

Sign No. 15.23C

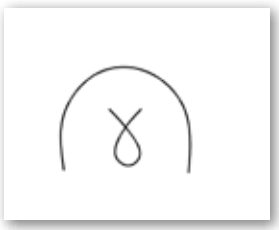

Sign No. 15.24C

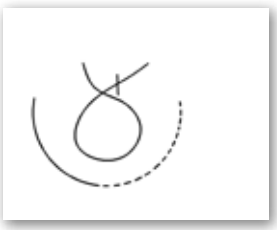
Sign No. 15.25C

Sign No. 15.26C


Sign No. 15.27C

Sign No. 15.28C


Sign No. 15.29C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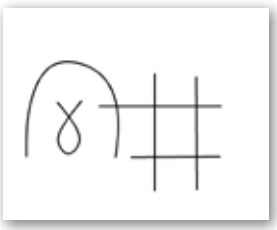
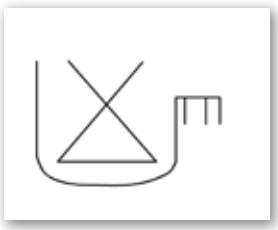
Sign No. 15.31C

Sign No. 15.32C

Sign No. 15.33C


Sign No. 15.34C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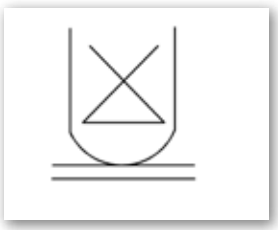
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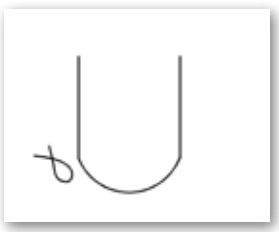
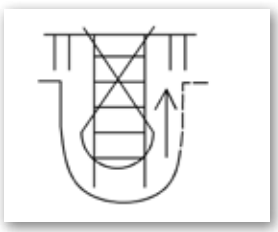

Sign No. 15.37C

Sign No. 15.38C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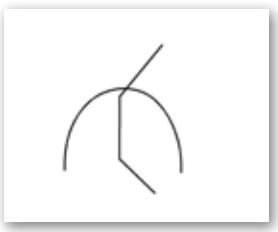
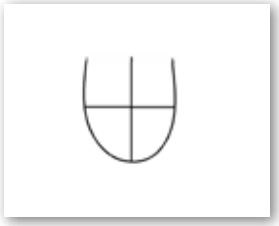
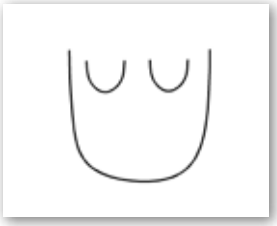

Sign No. 15.40C

Sign No.15-Composites

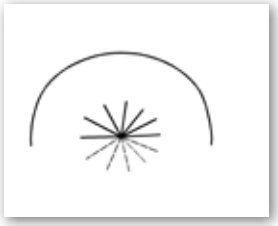


Sign No. 15.41C

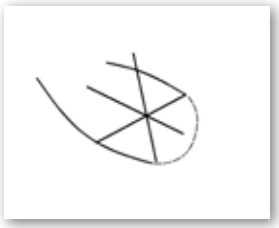


Sign No. 15.42C

Sign No. 15.43C

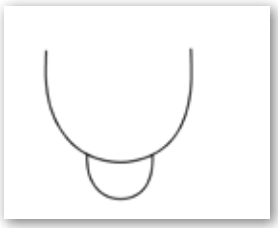


Sign No. 15.44C

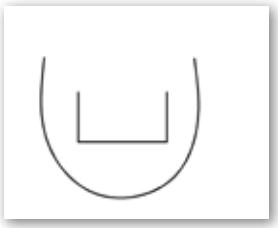


Sign No. 15.45C

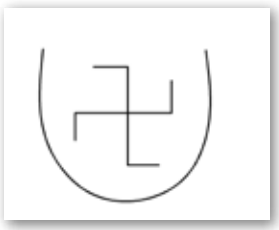
Sign No. 15.46C



Sign No. 15.47C



Sign No. 15.48C



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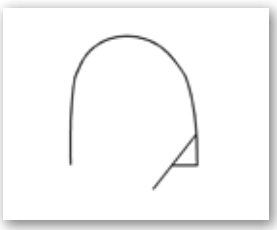
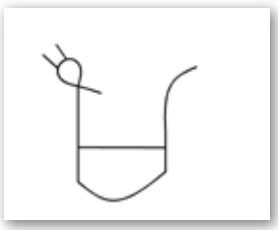


Sign No. 15.50C



Sign No. 15.51C

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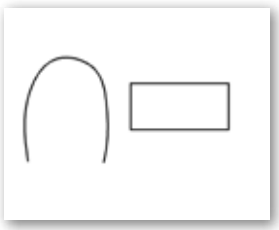

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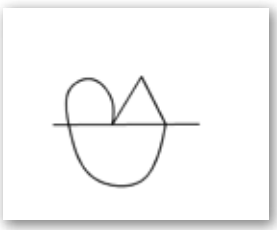
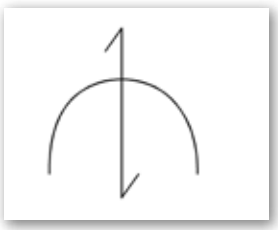


Sign No. 15.54C

Sign No. 15.55C



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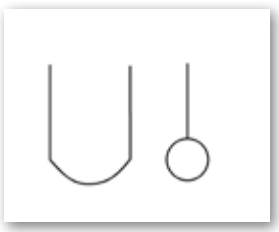

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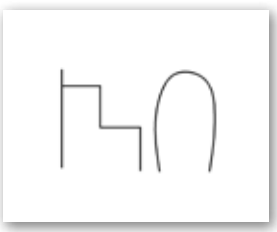


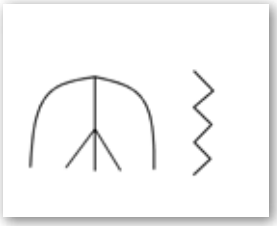
Sign No. 15.58C

Sign No. 15.59C

Sign No. 15.60C

Sign No.15-Composites

Sign No. 15.61C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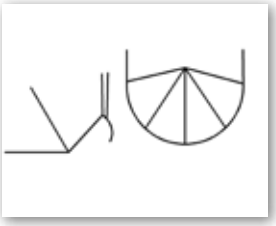
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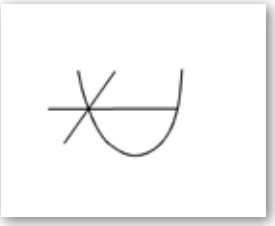
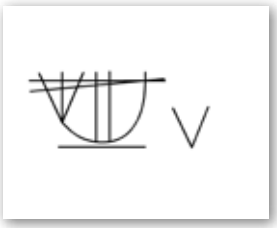
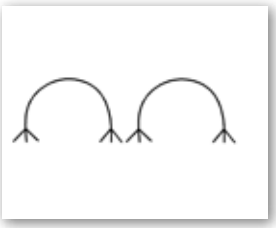
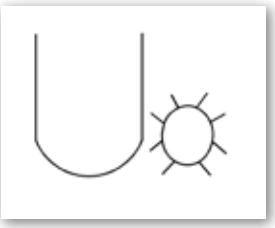

Sign No. 15.64C

Sign No. 15.65C

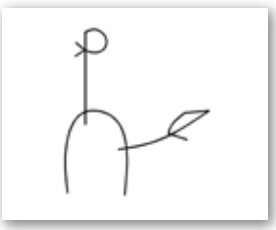

Sign No. 15.66C


Sign No. 15.67C

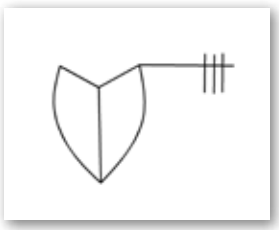

Sign No. 15.68C

Sign No. 15.69C

Sign No. 15.70C


Sign No. 15.71C

Sign No. 15.72C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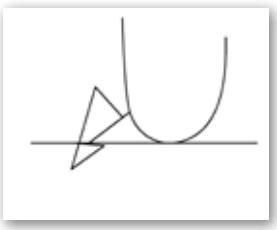
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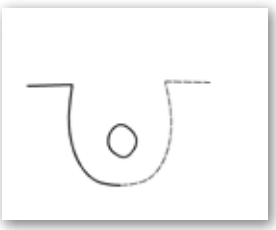
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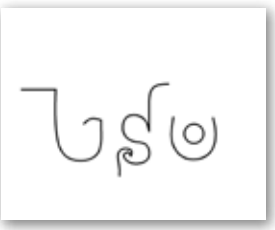
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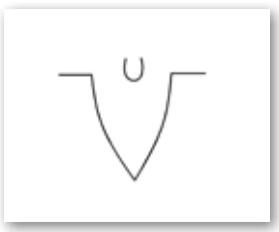
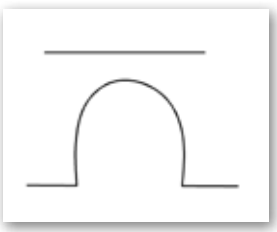
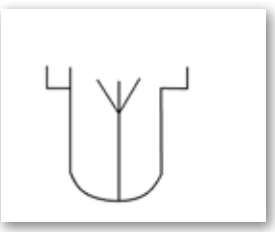
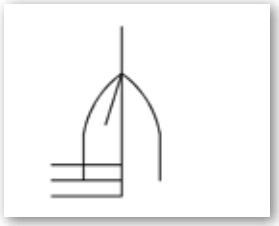

Sign No. 15.77C


Sign No. 15.78C

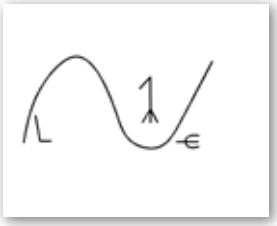
Sign No. 15.79C


Sign No. 15.80C

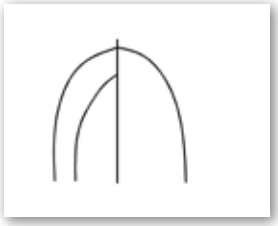
Sign No.15-Composites



Sign No. 15.81C

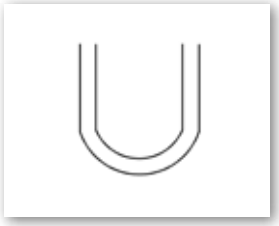


Sign No. 15.82C

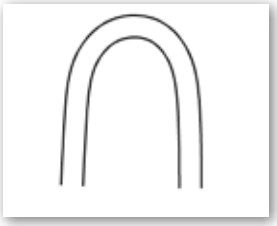


Sign No. 15.83C

Sign No.16-Base & Its Variants



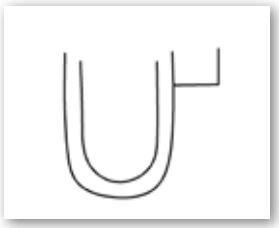
Sign No. 16.0



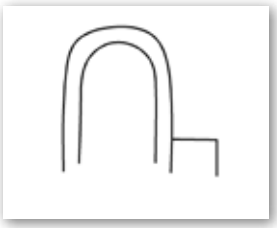
Sign No. 16.1

Sign No. 16.2

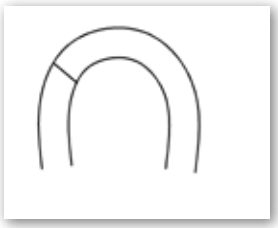
Sign No. 16.3



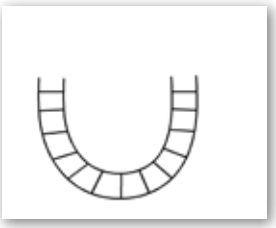
Sign No. 16.4



Sign No. 16.5



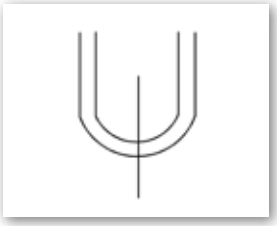
Sign No. 16.6



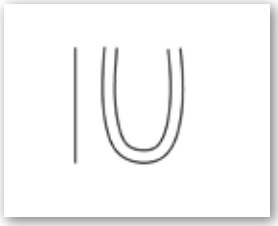
Sign No. 16.7

Sign No.16-Composites

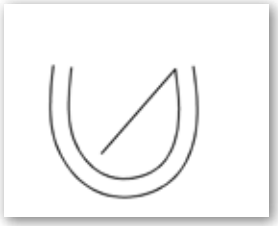
Sign No. 16.1C



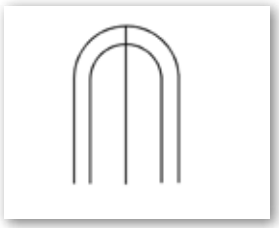
Sign No. 16.2C



Sign No. 16.3C



Sign No. 16.4C



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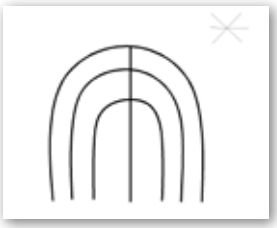

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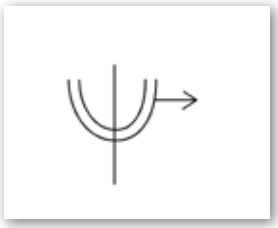
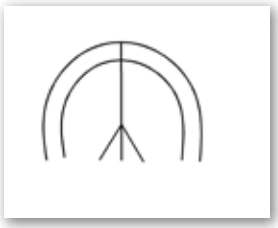


Sign No. 16.7C

Sign No. 16.8C

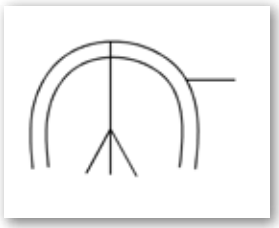
Sign No. 16.9C

Sign No. 16.10C



Sign No. 16.11C

Sign No. 16.12C



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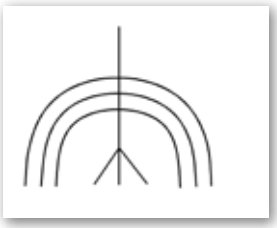

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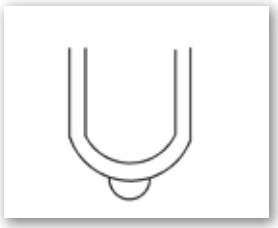
Sign No. 16.15C



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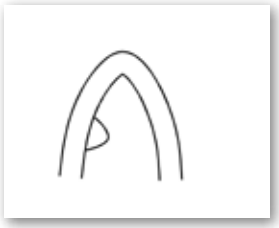
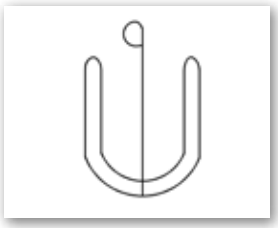


Sign No. 16.17C

Sign No. 16.18C



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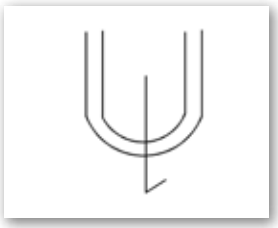
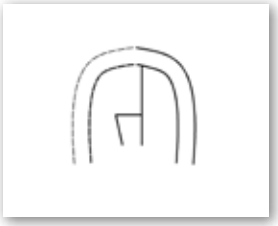


Sign No. 16.20C

Sign No.16-Composites

Sign No. 16.21C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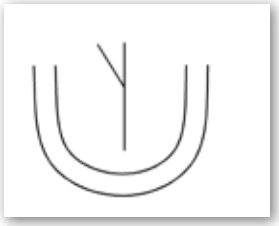
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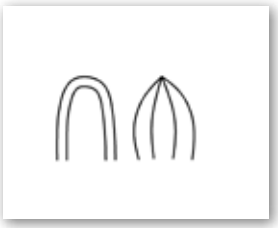
Sign No. 16.24C

Sign No. 16.25C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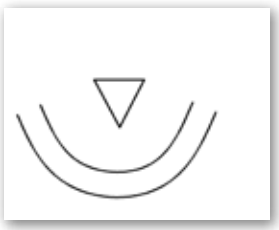
Sign No. 16.28C

Sign No. 16.29C

Sign No. 16.30C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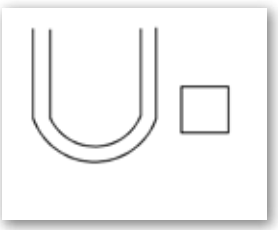
Sign No. 16.33C

Sign No. 16.34C

Sign No. 16.35C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Sign No. 16.37C

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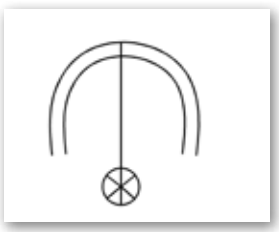
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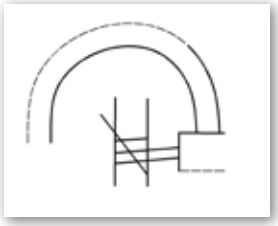
Sign No. 16.40C

Sign No.16-Composites

Sign No. 16.41C

Sign No. 16.42C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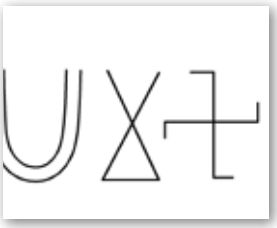
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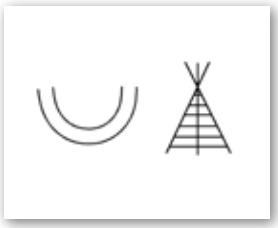
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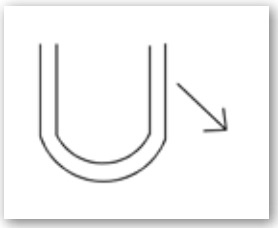
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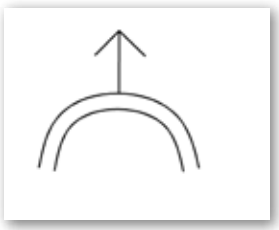
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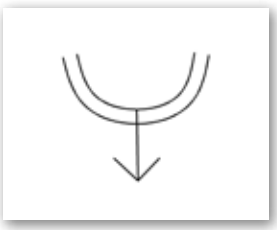
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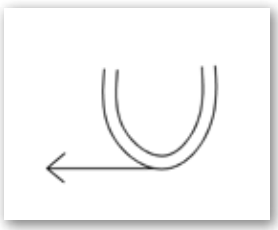
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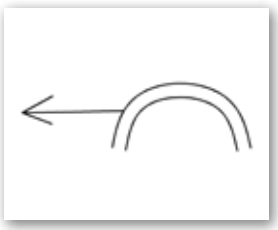
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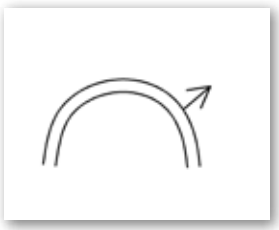
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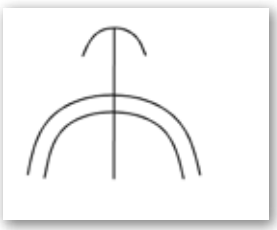
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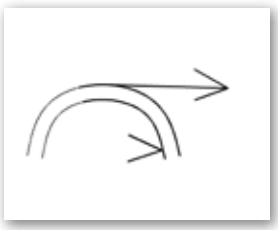
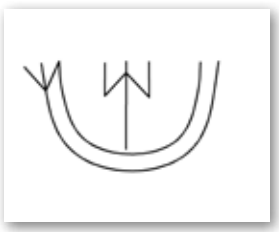

Sign No. 16.55C

Sign No. 16.56C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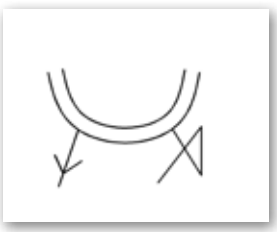
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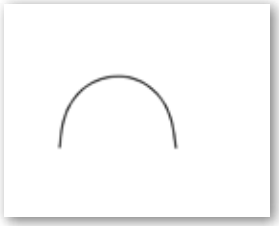
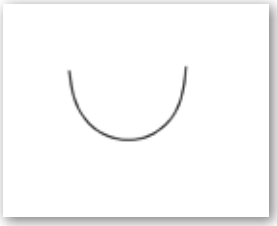
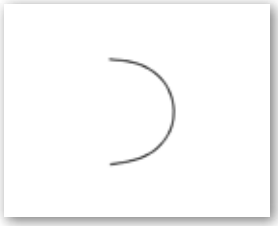
Sign No.17-Base & Its Variants



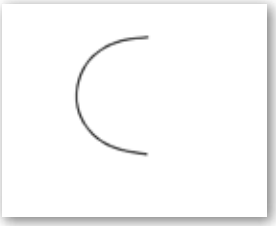
Sign No. 17.0



Sign No. 17.1



Sign No. 17.2



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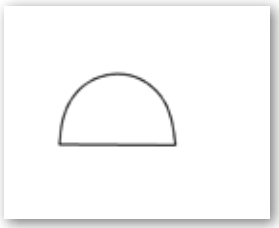

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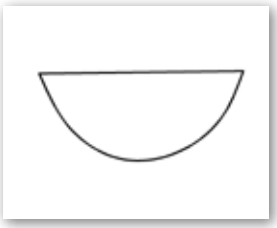

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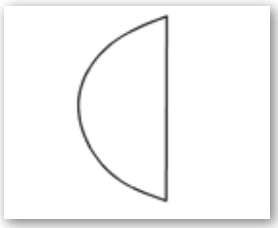
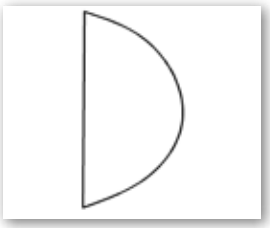


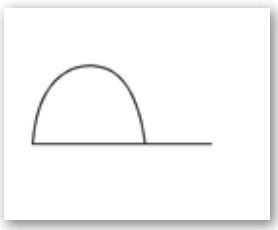
Sign No. 17.6



Sign No. 17.7

Sign No. 17.8

Sign No. 17.9



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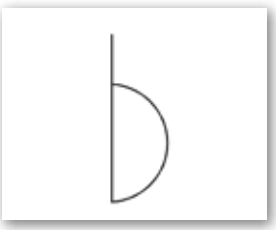
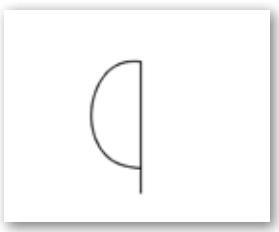
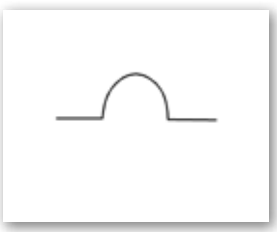


Sign No. 17.11

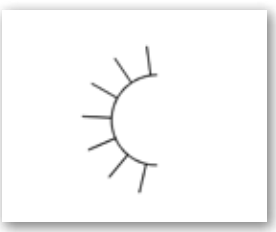


Sign No. 17.12

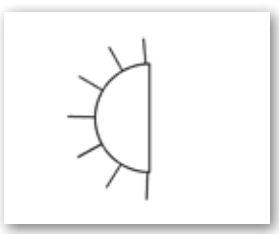


Sign No. 17.13

Sign No. 17.14

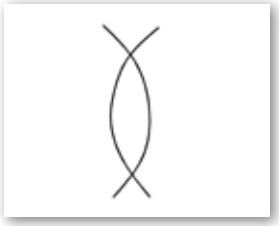


Sign No. 17.15

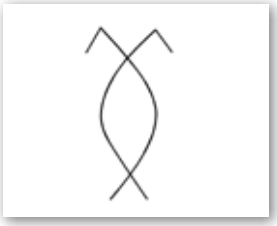


Sign No. 17.16

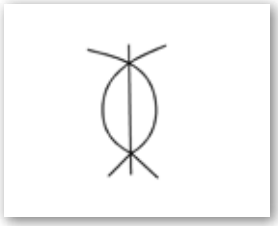
Sign No.17-Composites



Sign No. 17.1C



Sign No. 17.2C



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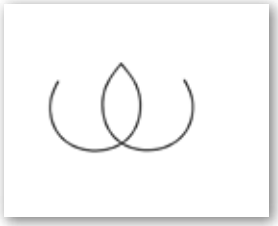
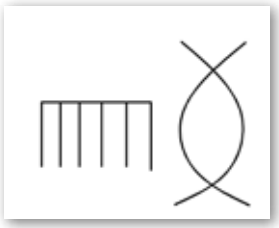
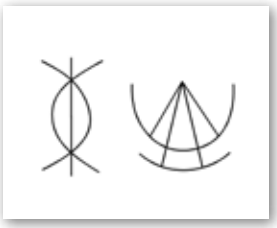


Sign No. 17.4C



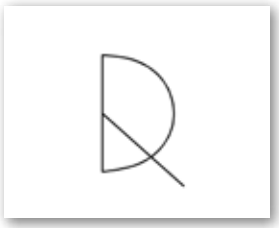
Sign No. 17.5C



Sign No. 17.6C

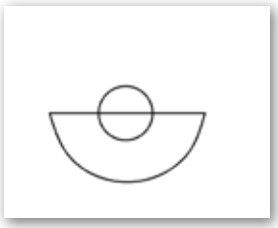
Sign No. 17.7C

Sign No. 17.8C

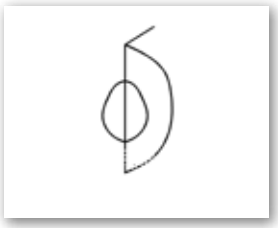


Sign No. 17.9C

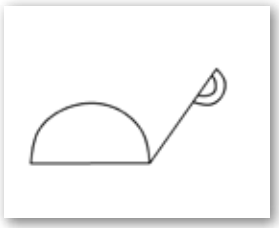
Sign No. 17.10C



Sign No. 17.11C

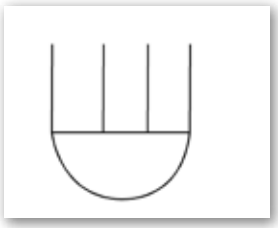


Sign No. 17.12C

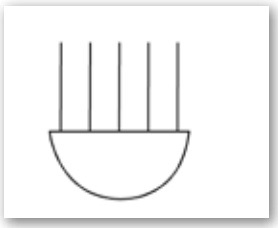


Sign No. 17.13C

Sign No. 17.14C



Sign No. 17.15C



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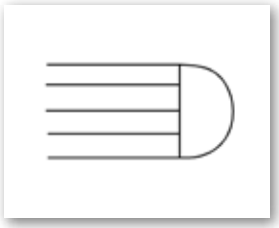
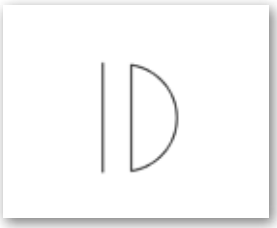


Sign No. 17.17C



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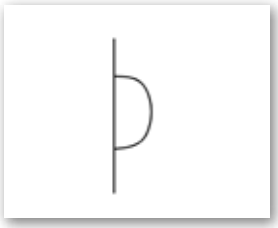

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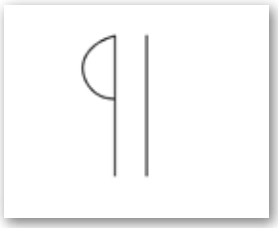
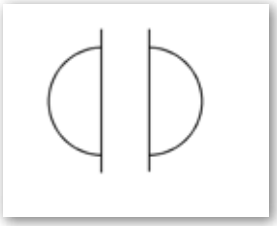


Sign No. 17.20C

Sign No.17-Composites

Sign No. 17.21C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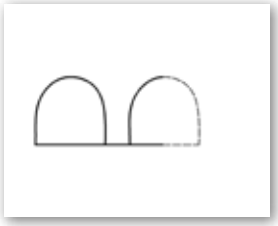
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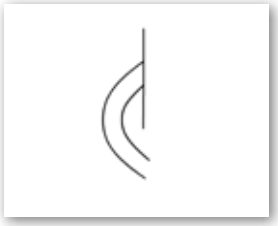
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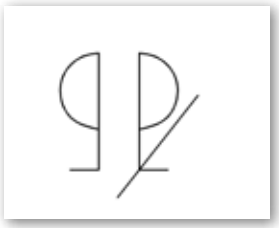
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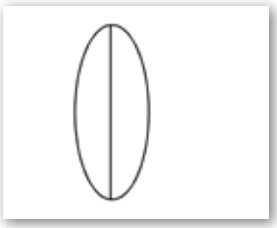
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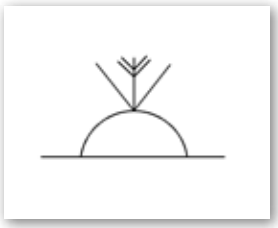
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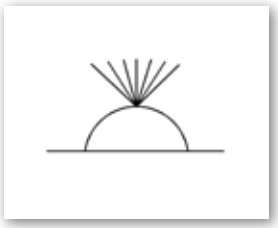
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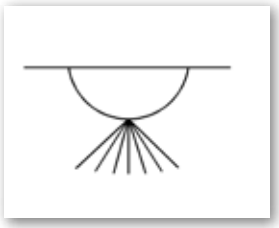
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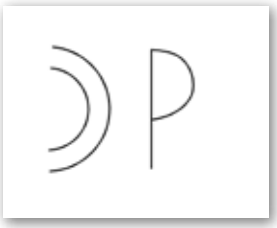
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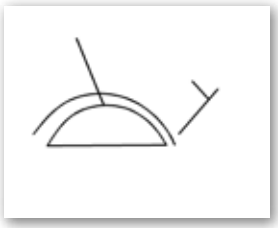
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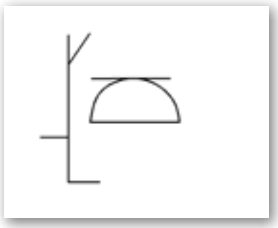
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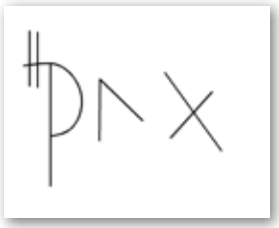
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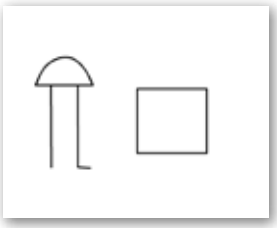
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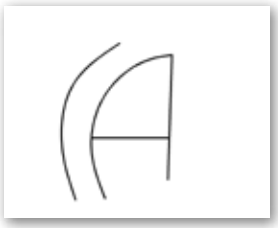
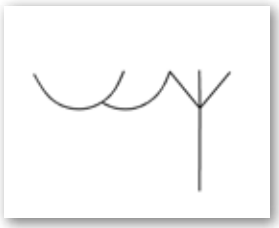

Sign No. 17.35C

Sign No. 17.36C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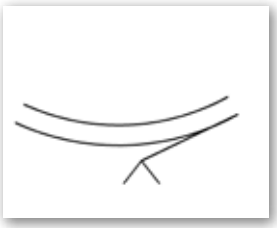
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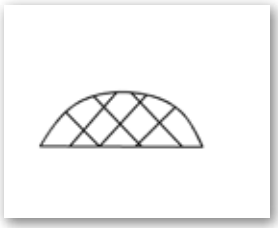
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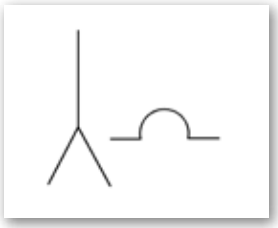
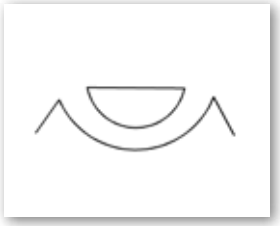
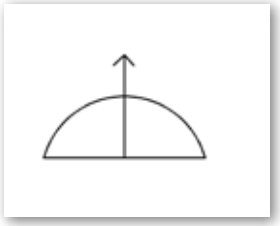

Sign No. 17.40C

Sign No.17-Composites

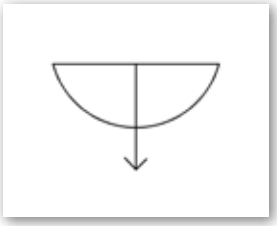


Sign No. 17.41C

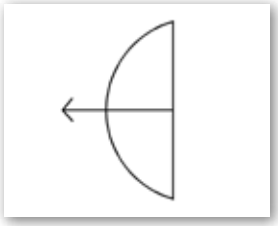
Sign No.18-Base & Its Varients



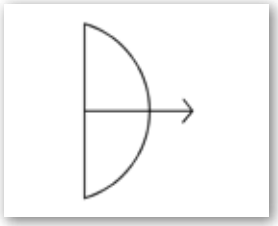
Sign No. 18.0



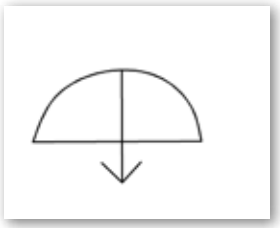
Sign No. 18.1



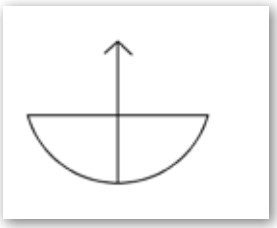
Sign No. 18.2



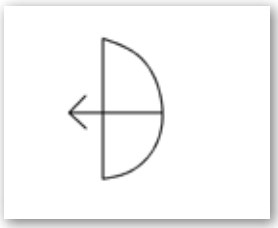
Sign No. 18.3



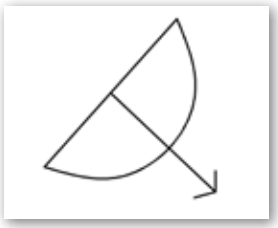
Sign No. 18.4



Sign No. 18.5

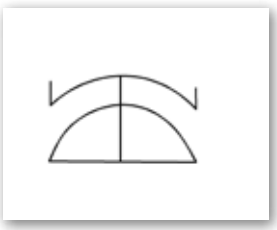


Sign No. 18.6

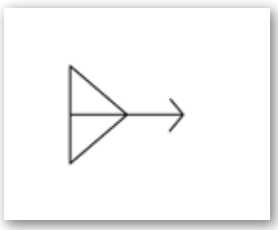


Sign No. 18.7

Sign No. 18.8

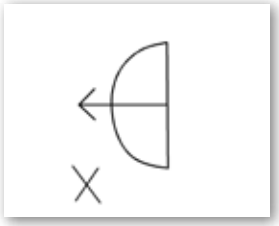


Sign No. 18.9

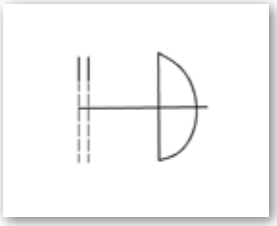


Sign No. 18.10

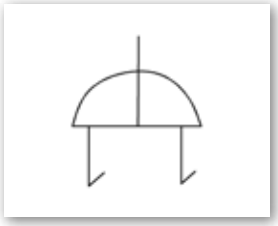
Sign No.18-Composites



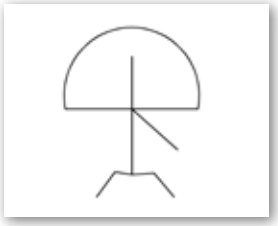
Sign No. 18.1C



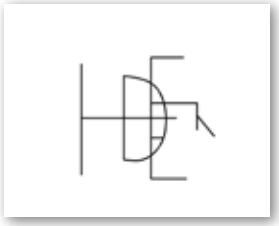
Sign No. 18.2C



Sign No. 18.3C

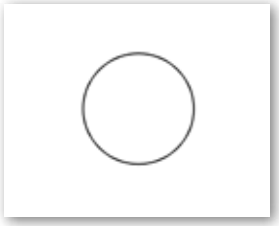


Sign No. 18.4C

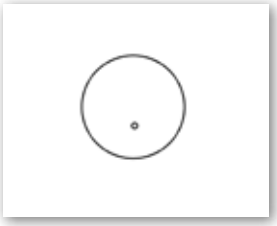


Sign No. 18.5C

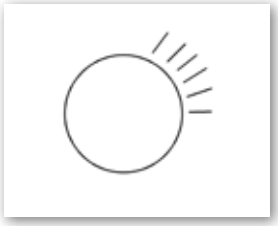
Sign No.19-Base & Its Variants



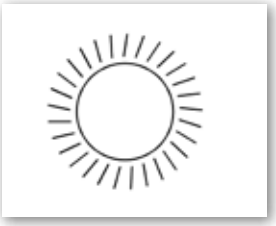
Sign No. 19.0



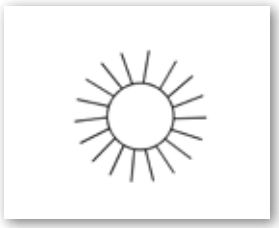
Sign No. 19.1



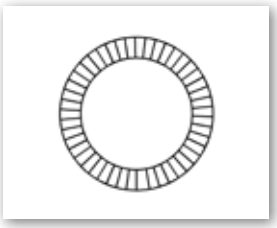
Sign No. 19.2



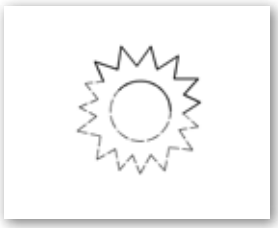
Sign No. 19.3



Sign No. 19.4

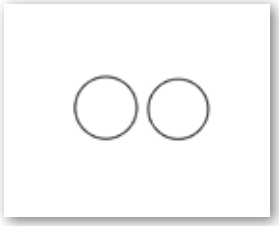


Sign No. 19.5

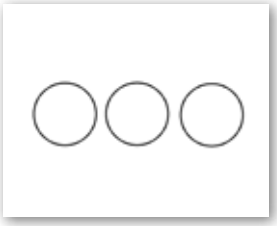


Sign No. 19.6

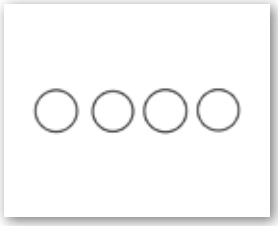
Sign No.19-Composites



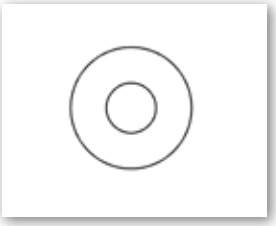
Sign No. 19.1C



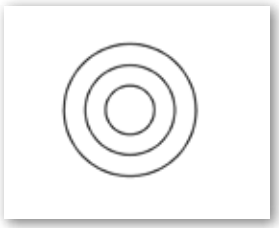
Sign No. 19.2C



Sign No. 19.3C

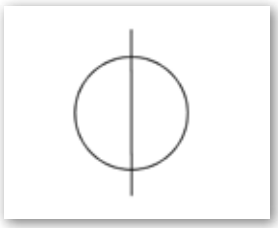


Sign No. 19.4C



Sign No. 19.5C

Sign No. 19.6C



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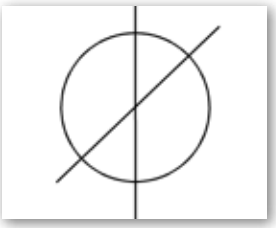

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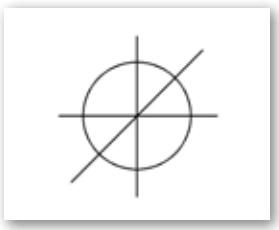

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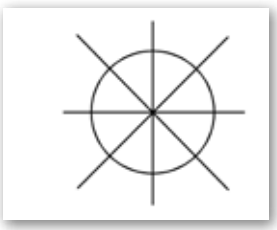

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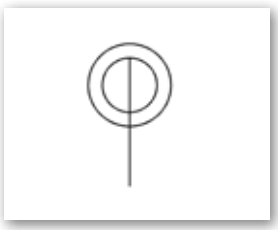
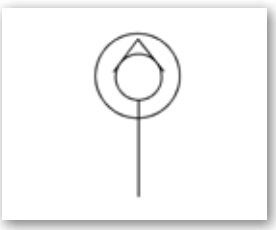


Sign No. 19.11C



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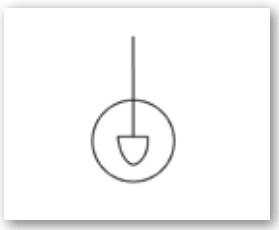

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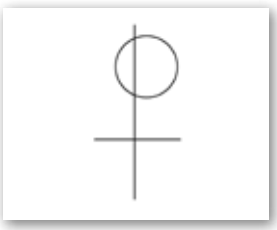

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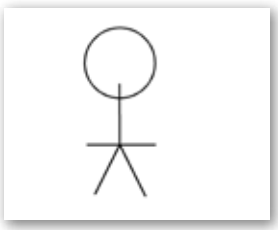

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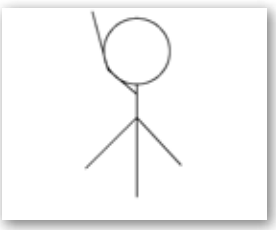

Sign No. 19.16C

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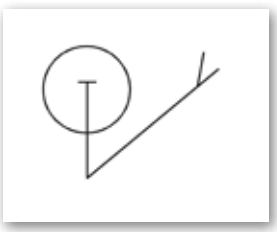

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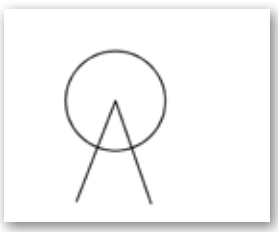
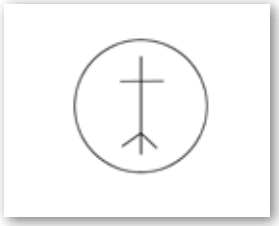


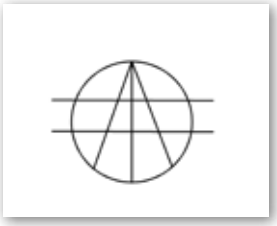
Sign No. 19.19C

Sign No. 19.20C

Sign No.19-Composites



Sign No. 19.21C



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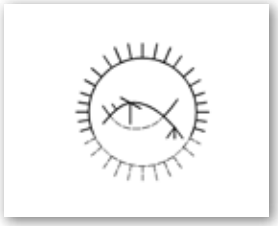
Sign No. 19.23C



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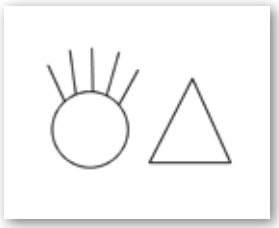

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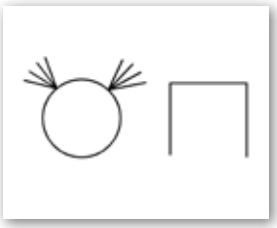

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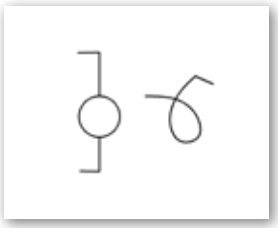
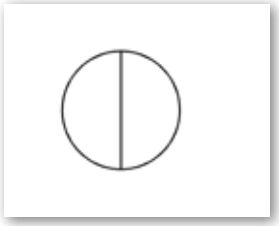
Sign No. 19.27C

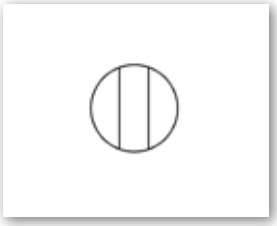


Sign No. 19.28C

Sign No.20-Base & Its Variants



Sign No. 20.0



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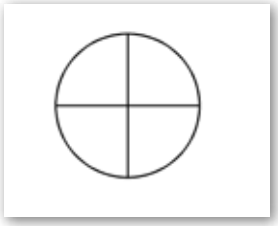

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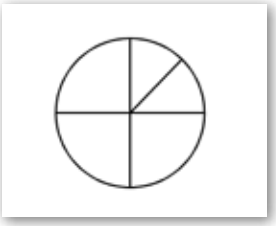

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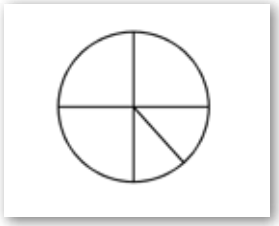

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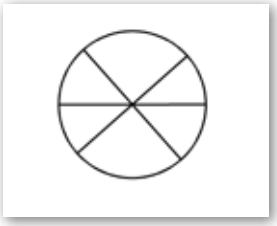

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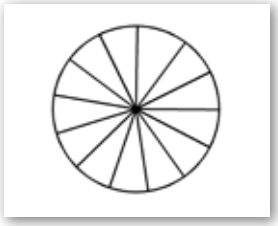
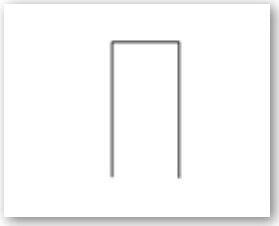


Sign No. 20.6

Sign No.21-Base & Variants



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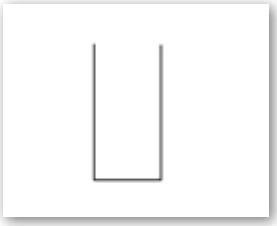

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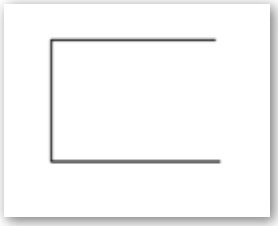

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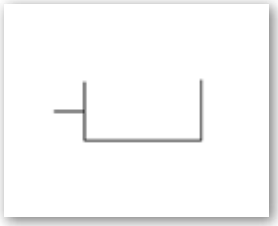

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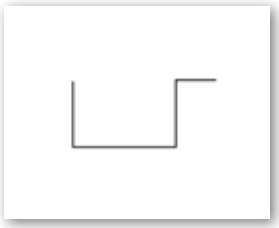

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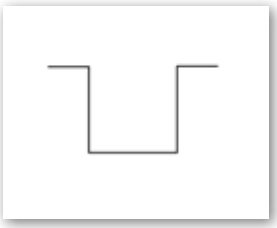

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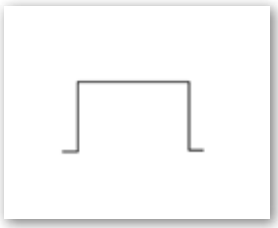
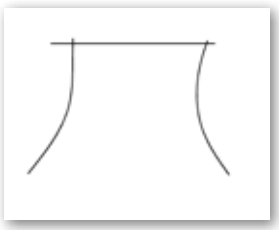


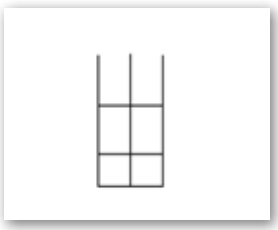
Sign No. 21.6

Sign No. 21.7



Sign No. 21.8

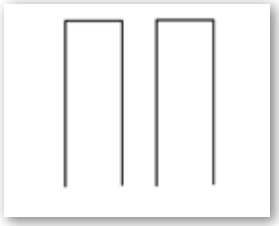
Sign No. 21.9



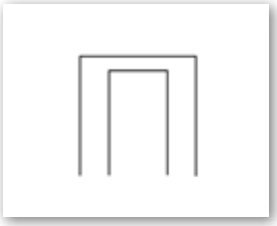
Sign No. 21.10

Sign No. 21.11

Sign No.21-Composites



Sign No. 21.1C



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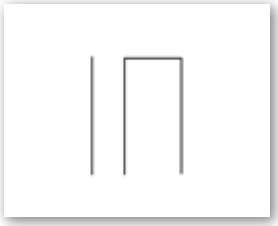

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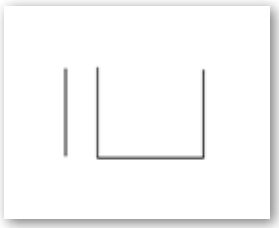
Sign No. 21.4C



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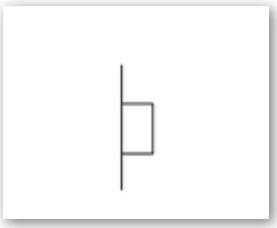

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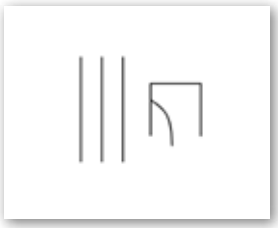

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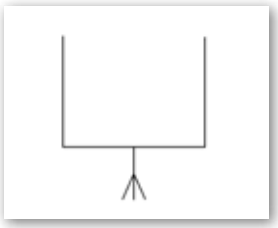

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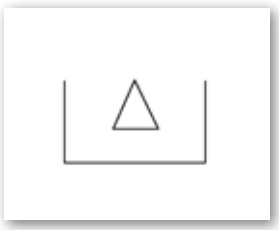

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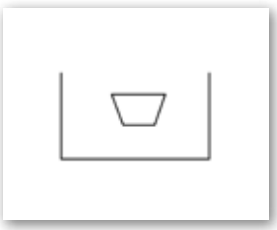

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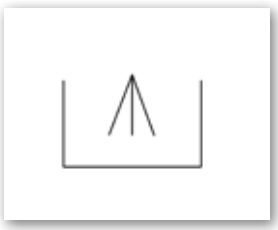

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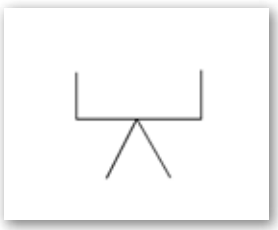

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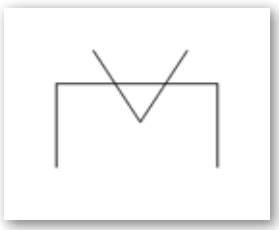

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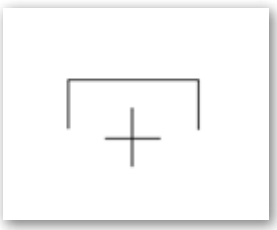

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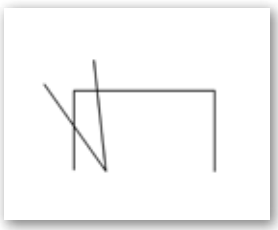

Sign No. 21.15C

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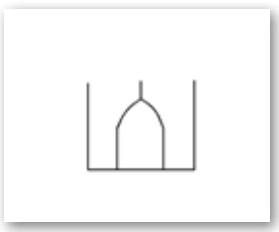

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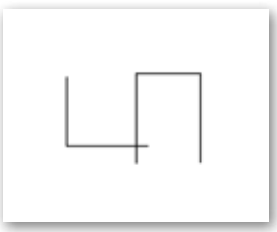

Sign No. 21.18C

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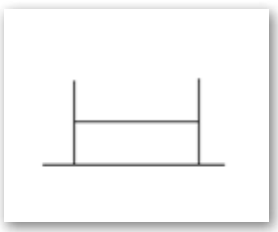
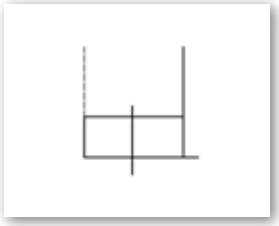
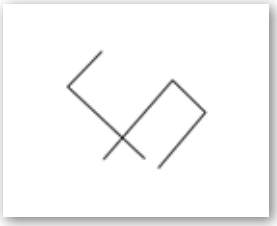


Sign No. 21.20C

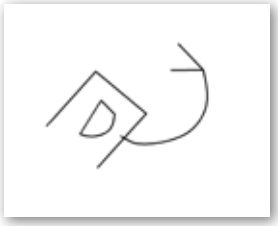
Sign No.21-Composites



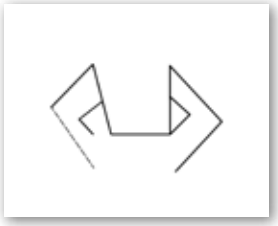
Sign No. 21.21C



Sign No. 21.22C



Sign No. 21.23C



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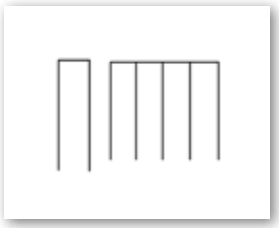

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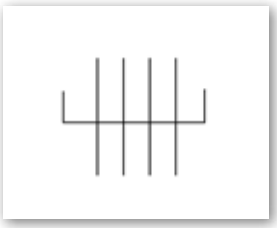

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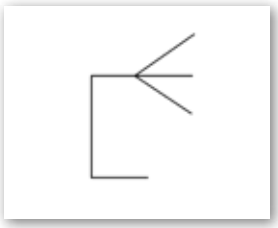
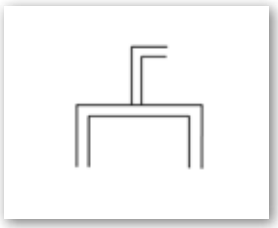


Sign No. 21.27C



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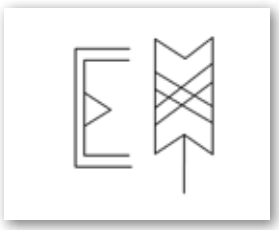

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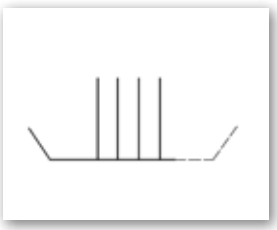

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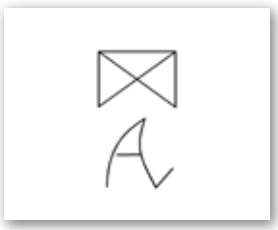

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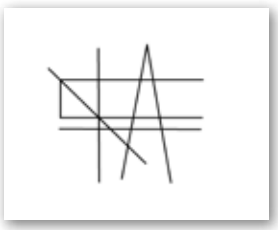

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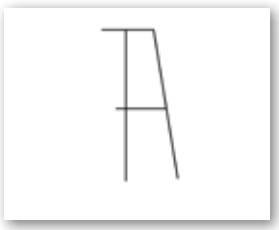
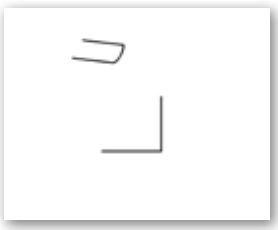


Sign No. 21.33C

Sign No. 21.34C



Sign No. 21.35C

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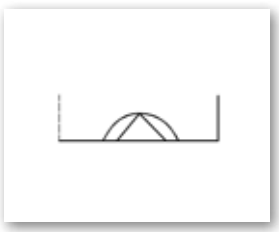

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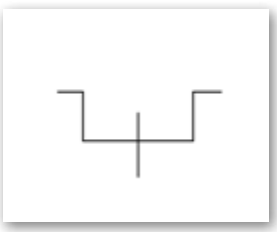
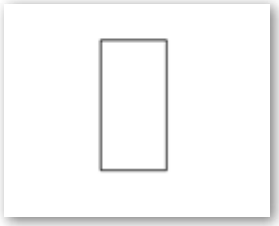
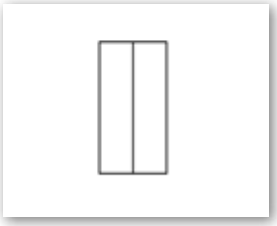


Sign No. 21.38C

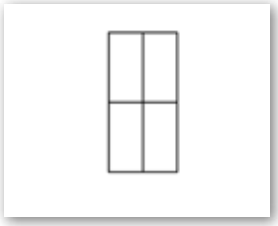
Sign No.22-Base & Its Variants



Sign No. 22.0



Sign No. 22.1



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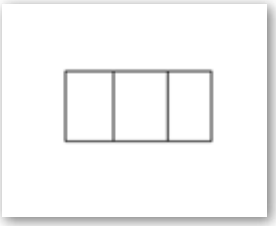

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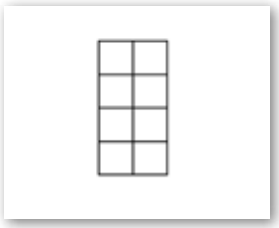

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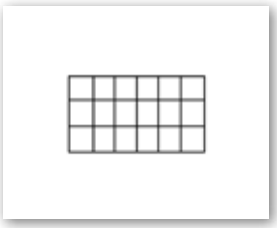

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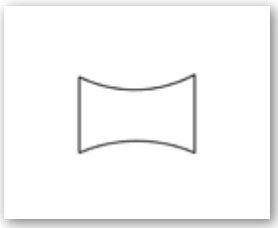

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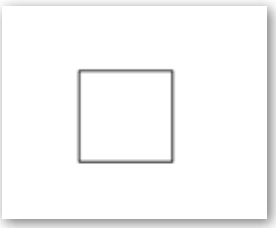

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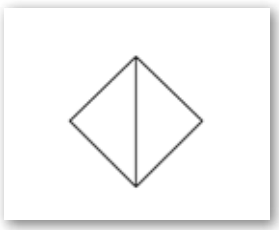

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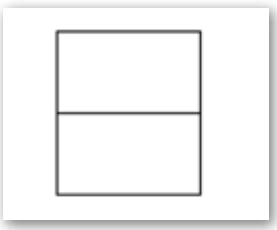

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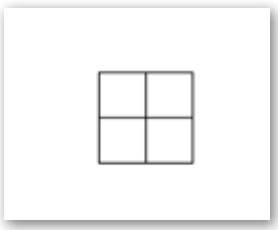

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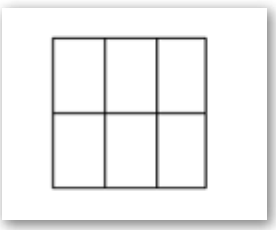

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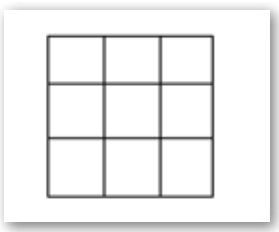

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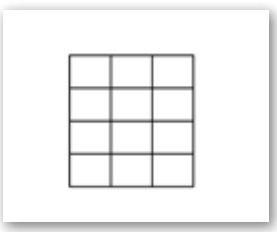

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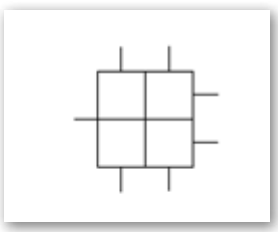

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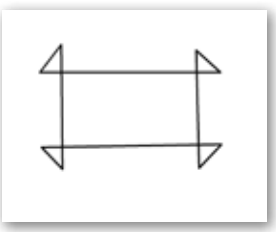
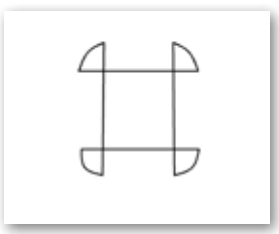
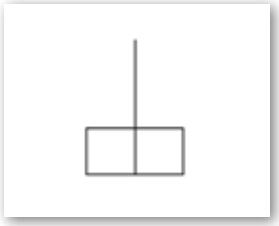


Sign No. 22.15

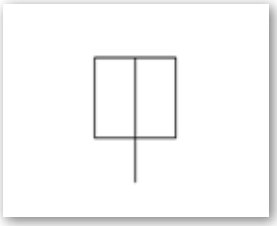


Sign No. 22.16

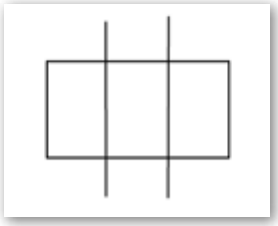
Sign No.22-Composites



Sign No. 22.1C



Sign No. 22.2C



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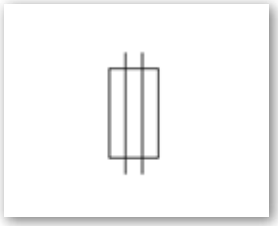

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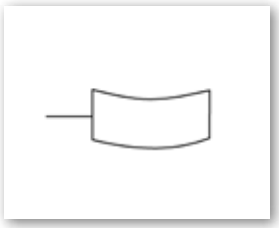

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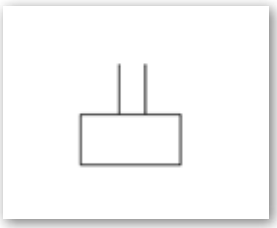

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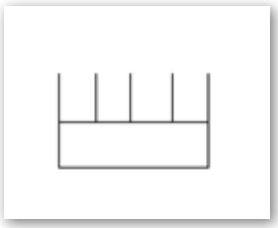

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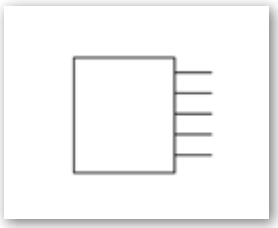
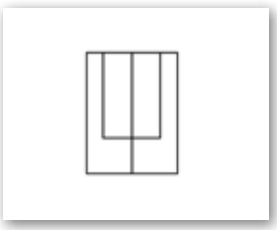


Sign No. 22.8C

Sign No. 22.9C



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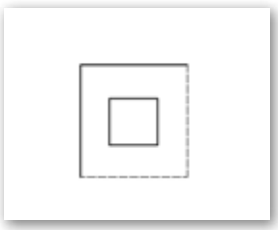

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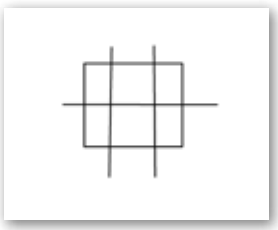

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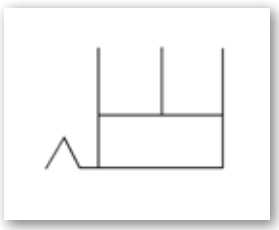

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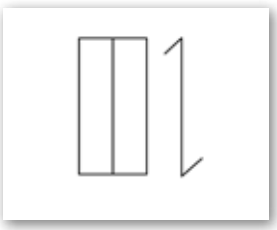

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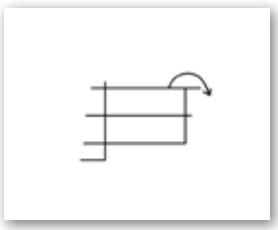

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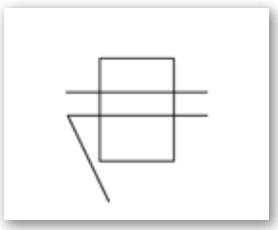
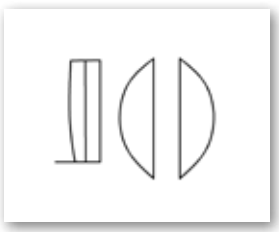


Sign No. 22.16C



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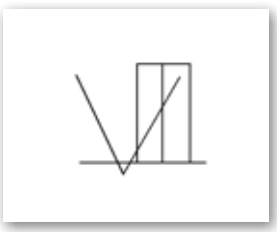
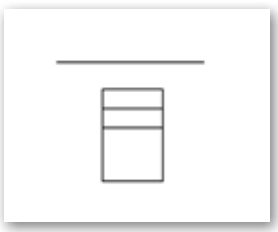
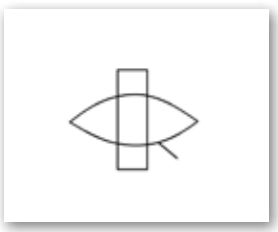


Sign No. 22.18C

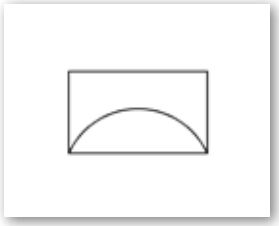


Sign No. 22.19C

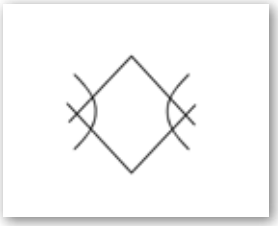


Sign No. 22.20C

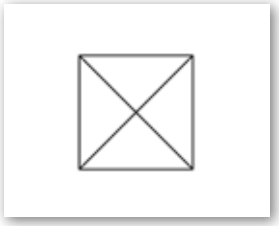
Sign No.22-Composites



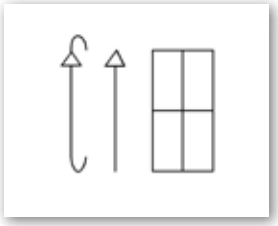
Sign No. 22.21C



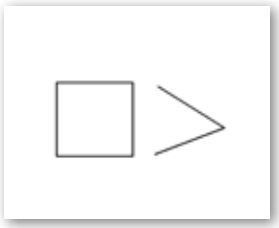
Sign No. 22.22C



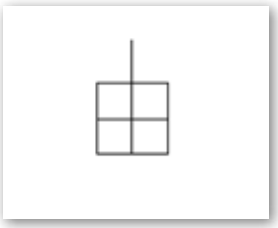
Sign No. 22.23C



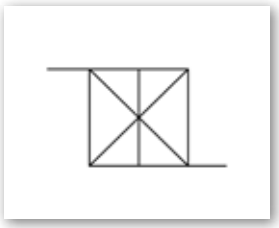
Sign No. 22.24C



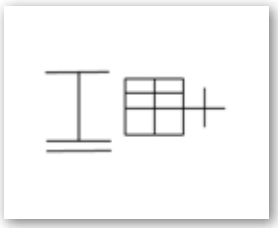
Sign No. 22.25C



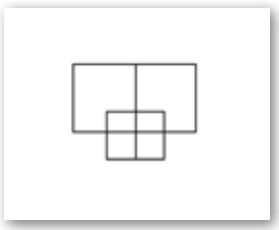
Sign No. 22.26C



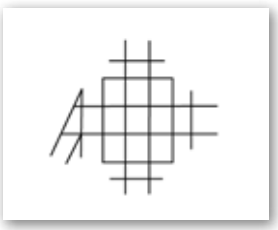
Sign No. 22.27C



Sign No. 22.28C



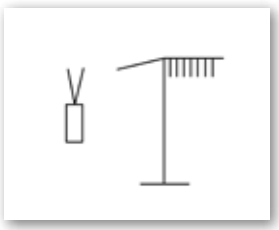
Sign No. 22.29C



Sign No. 22.30C

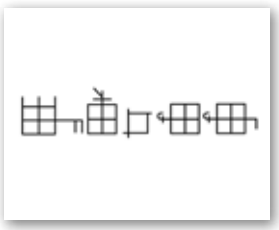
Sign No. 22.31C

Sign No. 22.32C



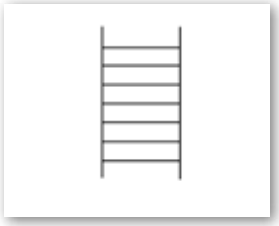
Sign No. 22.33C

Sign No. 22.34C

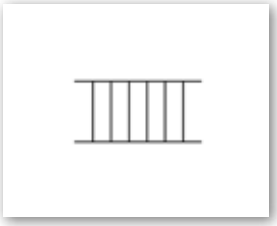


Sign No. 22.35C

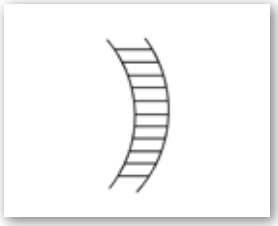
Sign No.23-Base & Its Variants



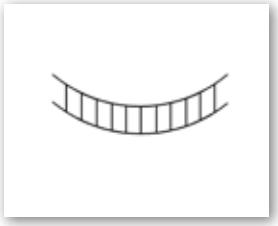
Sign No. 23.0



Sign No. 23.1



Sign No. 23.2

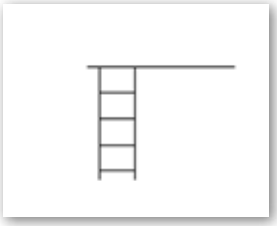


Sign No. 23.3

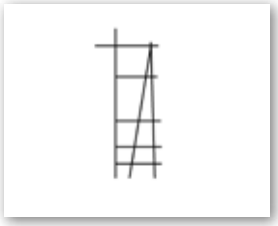
Sign No. 23.4

Sign No.23-Composites

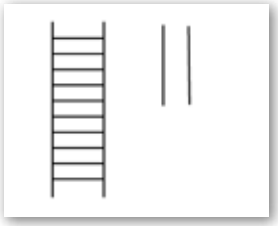
Sign No. 23.1C



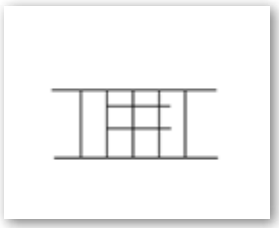
Sign No. 23.2C



Sign No. 23.3C

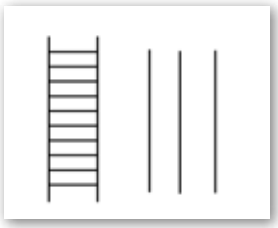


Sign No. 23.4C

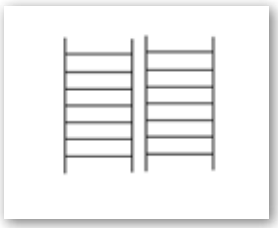


Sign No. 23.5C

Sign No. 23.6C

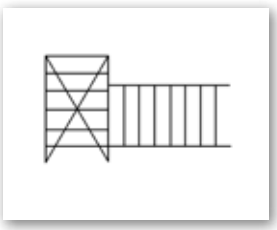


Sign No. 23.7C



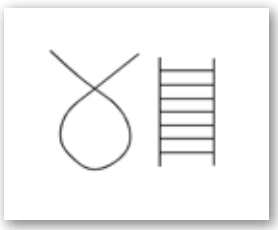
Sign No. 23.8C

Sign No. 23.9C

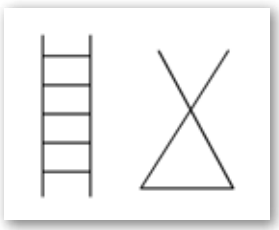


Sign No. 23.10C

Sign No. 23.11C

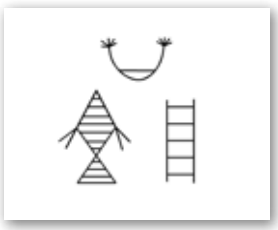


Sign No. 23.12C



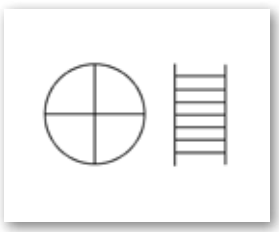
Sign No. 23.13C

Sign No. 23.14C

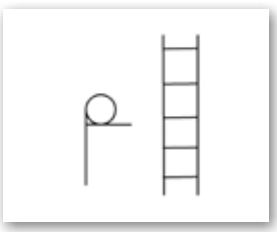


Sign No. 23.15C

Sign No. 23.16C



Sign No. 23.17C

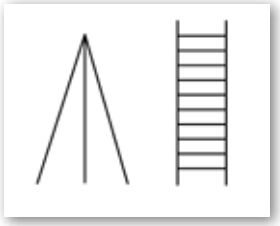


Sign No. 23.18C

Sign No. 23.19C

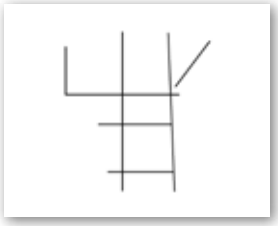
Sign No. 23.20C

Sign No.23-Composites

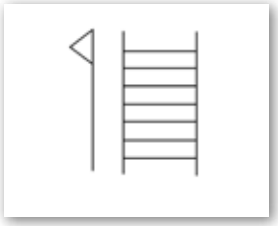


Sign No. 23.21C

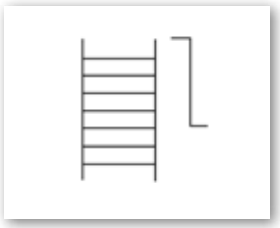
Sign No. 23.22C



Sign No. 23.23C

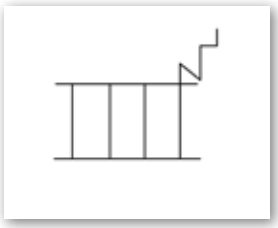


Sign No. 23.24C

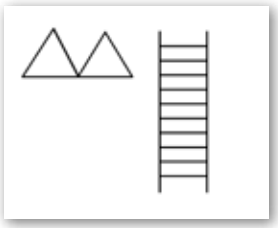


Sign No. 23.25C

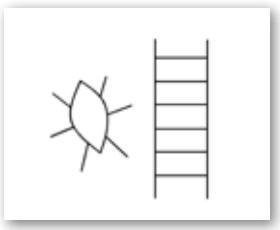
Sign No. 23.26C



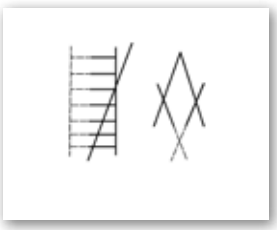
Sign No. 23.27C



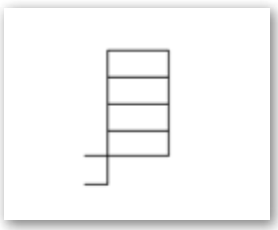
Sign No. 23.28C



Sign No. 23.29C

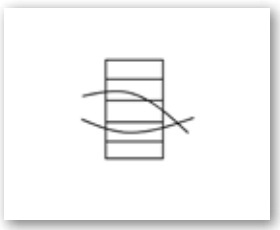


Sign No. 23.30C



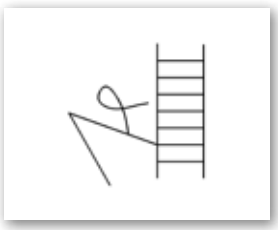
Sign No. 23.31C

Sign No. 23.32C

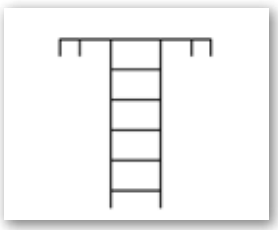


Sign No. 23.33C

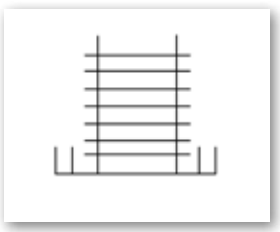
Sign No. 23.34C



Sign No. 23.35C



Sign No. 23.36C

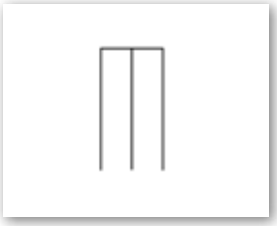


Sign No. 23.37C

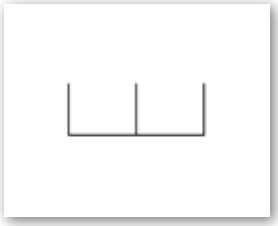
Sign No. 23.38C

Sign No.24-Base & Its Varients

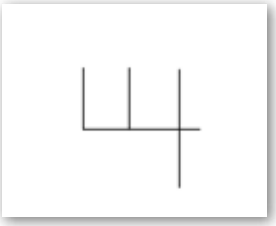
Sign No. 24.0



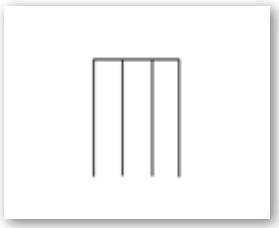
Sign No. 24.1



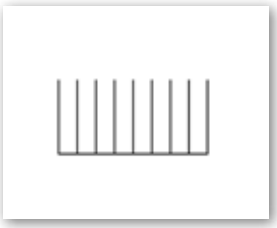
Sign No. 24.2



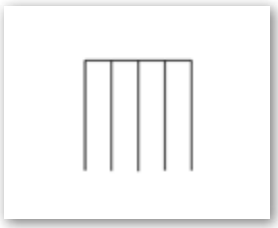
Sign No. 24.3



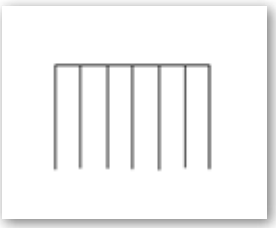
Sign No. 24.4



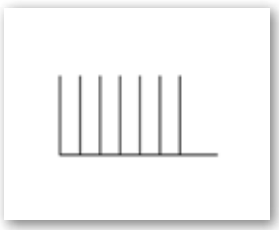
Sign No. 24.5



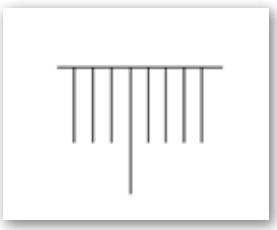
Sign No. 24.6



Sign No. 24.7



Sign No. 24.8



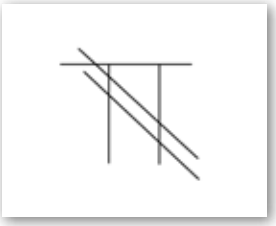
Sign No. 24.9

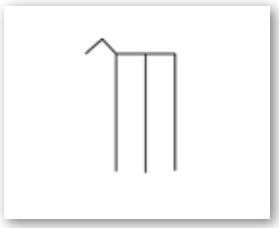
Sign No.24-Composites

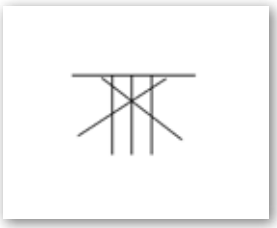
Sign No. 24.1C

Sign No. 24.2C

Sign No. 24.3C

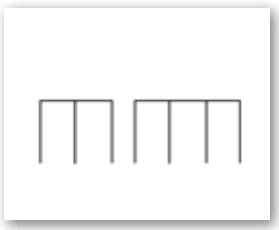

Sign No. 24.4C


Sign No. 24.5C


Sign No. 24.6C

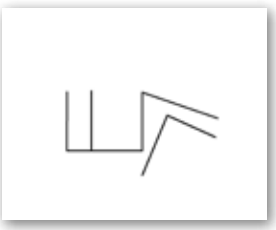
Sign No. 24.7C

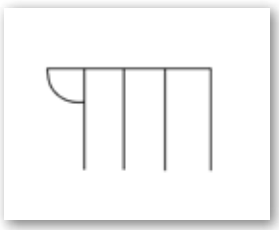
Sign No. 24.8C


Sign No. 24.9C

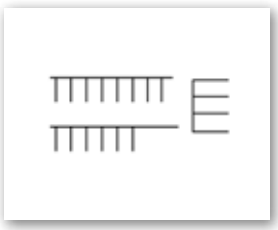
Sign No. 24.10C

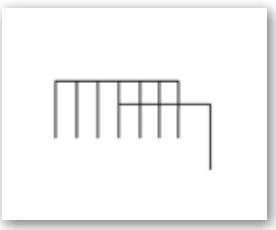
Sign No. 24.11C

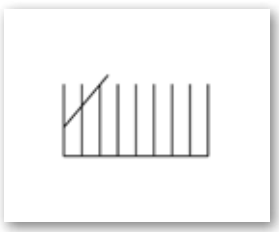

Sign No. 24.12C

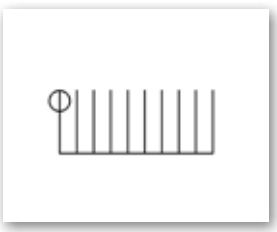

Sign No. 24.13C

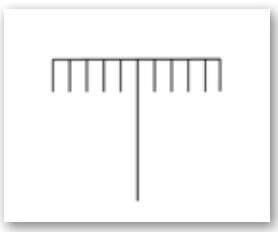
Sign No. 24.14C

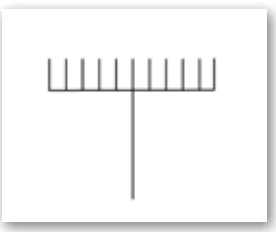

Sign No. 24.15C


Sign No. 24.16C

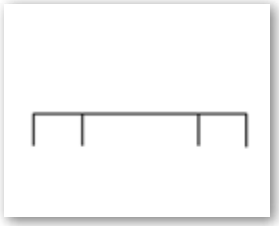

Sign No. 24.17C


Sign No. 24.18C

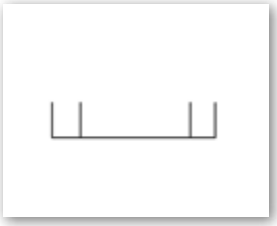

Sign No. 24.19C


Sign No. 24.20C

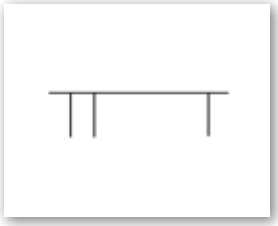
Sign No.25-Base & Its Variants



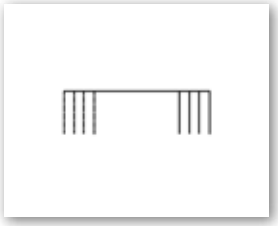
Sign No. 25.0



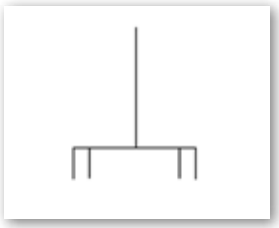
Sign No. 25.1



Sign No. 25.2

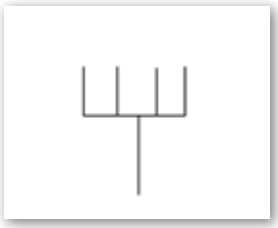


Sign No. 25.3

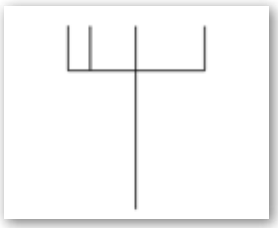


Sign No. 25.4

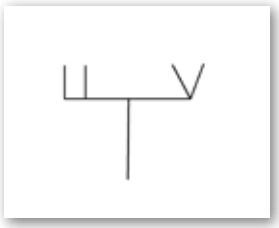
Sign No. 25.5



Sign No. 25.6

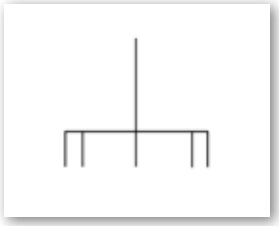


Sign No. 25.7

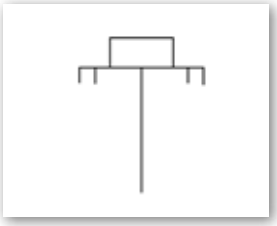


Sign No. 25.8

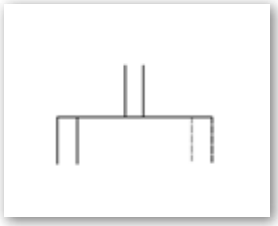
Sign No.25-Composites



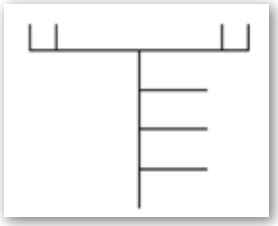
Sign No. 25.1C



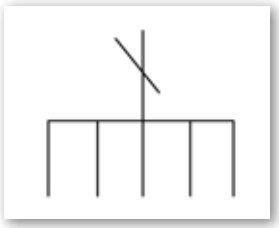
Sign No. 25.2C



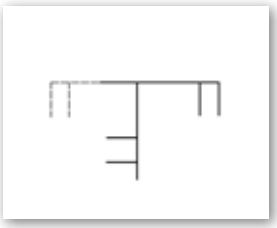
Sign No. 25.3C



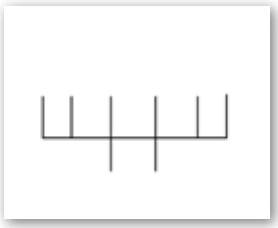
Sign No. 25.4C



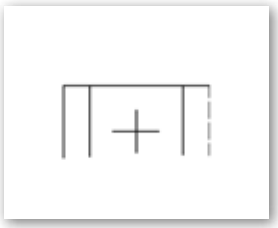
Sign No. 25.5C



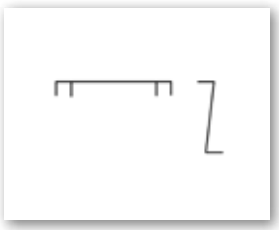
Sign No. 25.6C



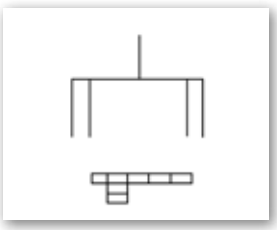
Sign No. 25.7C



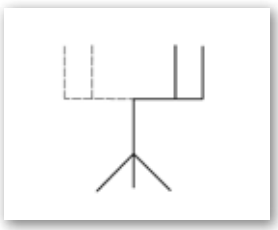
Sign No. 25.8C



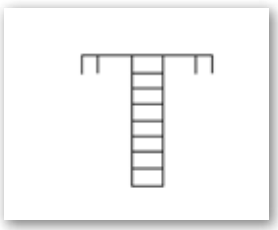
Sign No. 25.9C



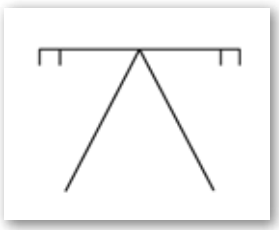
Sign No. 25.10C



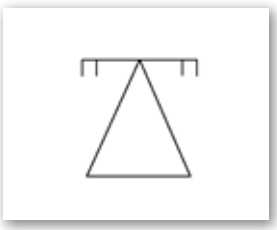
Sign No. 25.11C



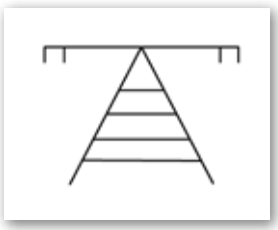
Sign No. 25.12C



Sign No. 25.13C

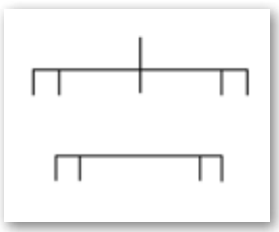


Sign No. 25.14C

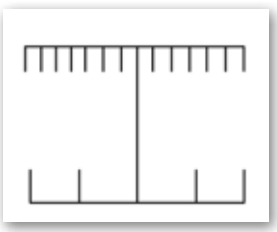


Sign No. 25.15C

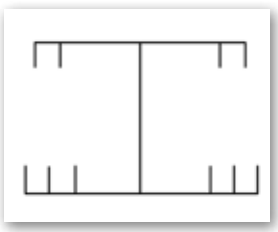
Sign No. 25.16C



Sign No. 25.17C



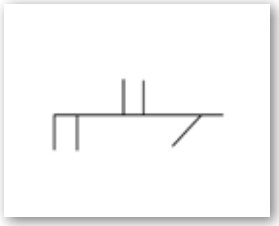
Sign No. 25.18C



Sign No. 25.19C

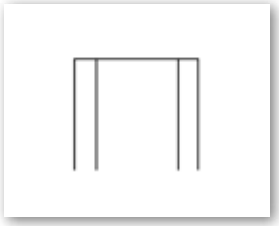
Sign No. 25.20C

Sign No.25-Composites

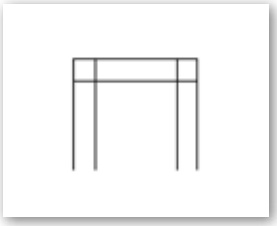


Sign No. 25.21C

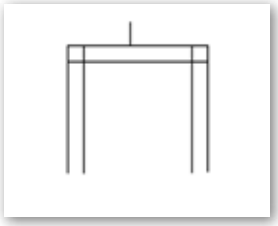
Sign No.26-Base & Its Variants



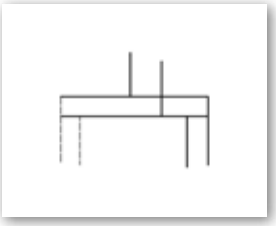
Sign No. 26.0



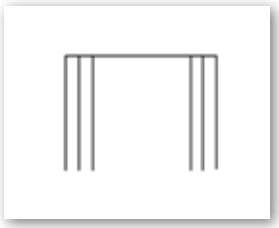
Sign No. 26.1



Sign No. 26.2



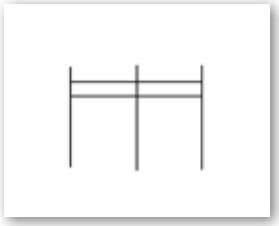
Sign No. 26.3



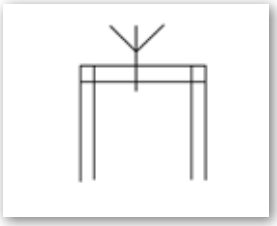
Sign No. 26.4

Sign No. 26.5

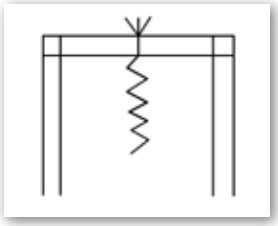
Sign No.26-Composites



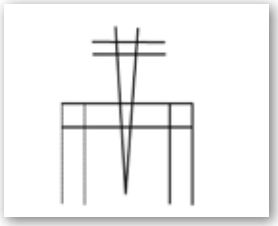
Sign No. 26.1C



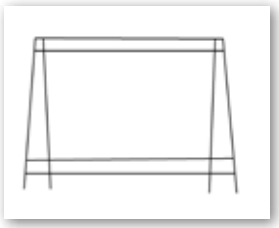
Sign No. 26.2C



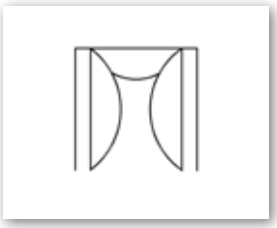
Sign No. 26.3C



Sign No. 26.4C



Sign No. 26.5C

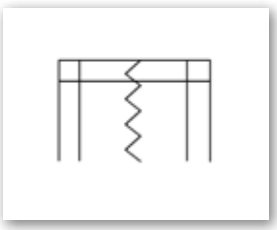


Sign No. 26.6C

Sign No. 26.7C

Sign No. 26.8C

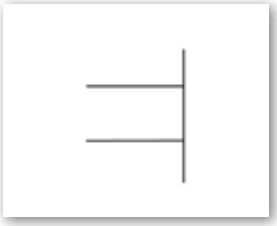
Sign No. 26.9C



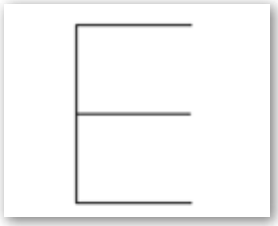
Sign No. 26.10C

Sign No.27-Base & Its Variants

Sign No. 27.0



Sign No. 27.1



Sign No. 27.2

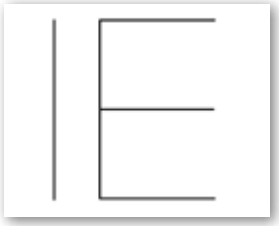
Sign No. 27.3

Sign No. 27.4

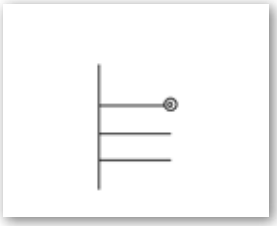
Sign No. 27.5

Sign No. 27.6

Sign No.27-Composites

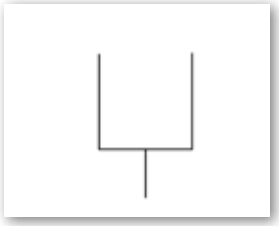


Sign No. 27.1C

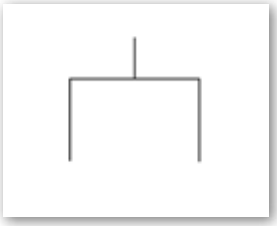


Sign No. 27.2C

Sign No.28-Base & Its Varients



Sign No. 28.0



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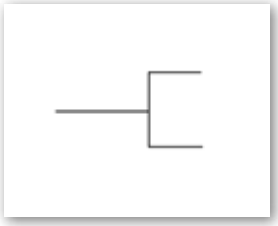

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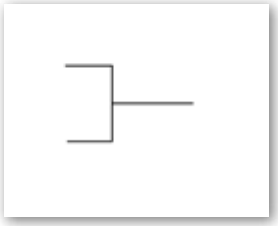

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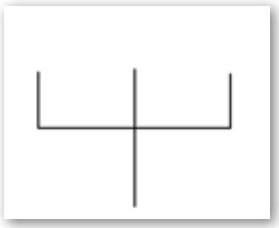

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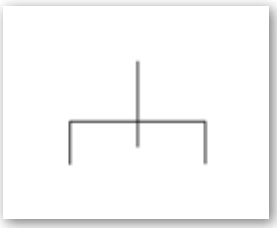

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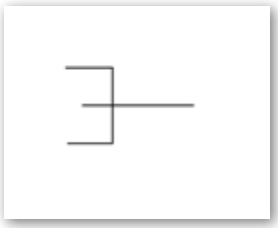

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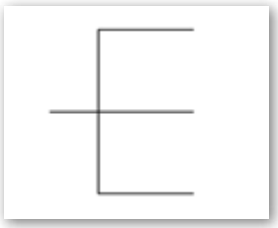

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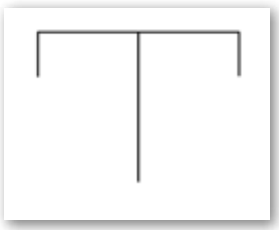

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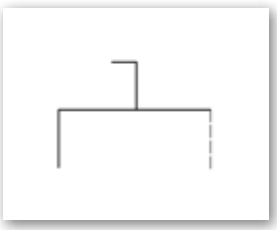
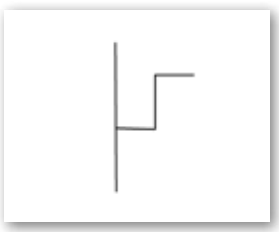


Sign No. 28.9

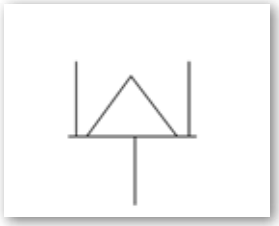
Sign No. 28.10

Sign No. 28.11



Sign No. 28.12

Sign No.28-Composites



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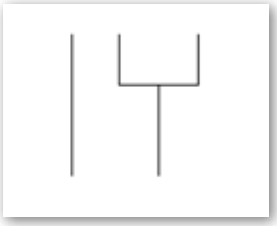

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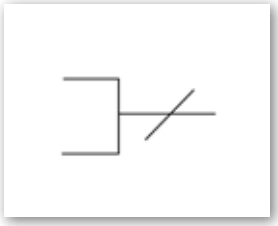

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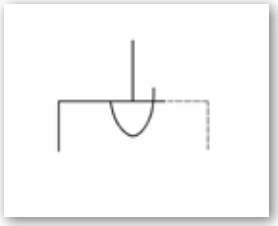

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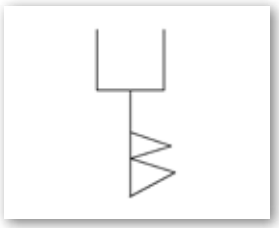

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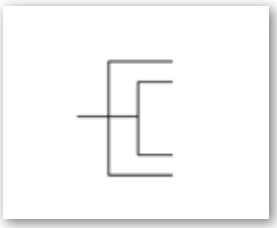

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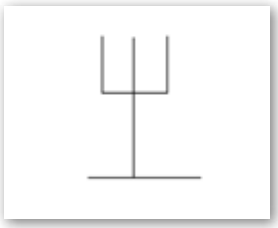
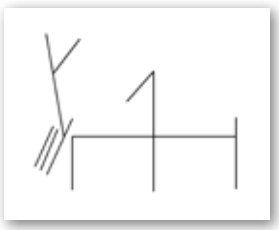


Sign No. 28.7C

Sign No. 28.8C



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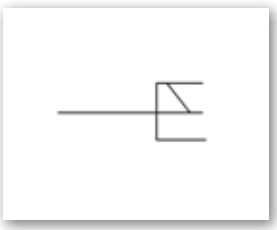

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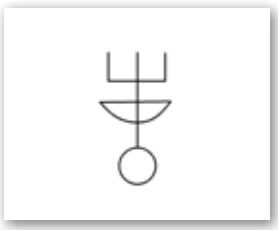

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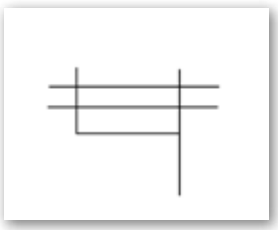
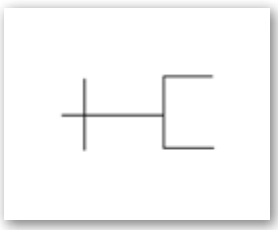


Sign No. 28.12C

Sign No. 28.13C

Sign No. 28.14C



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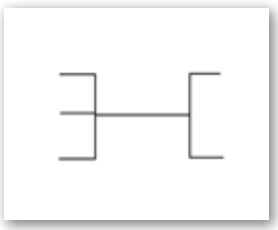

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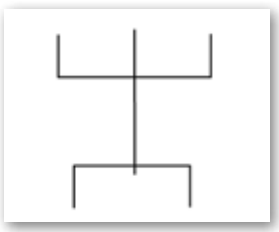

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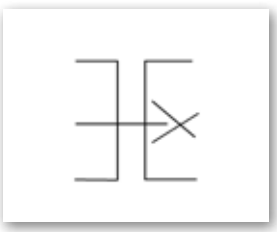
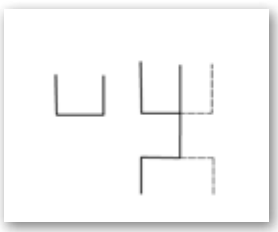


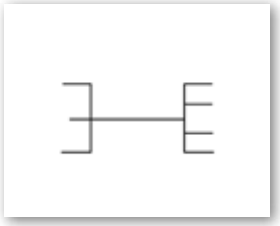
Sign No. 28.18C

Sign No. 28.19C



Sign No. 28.20C

Sign No.28-Composites



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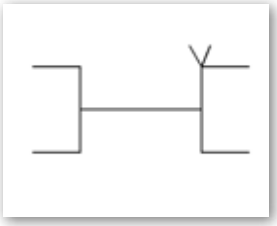

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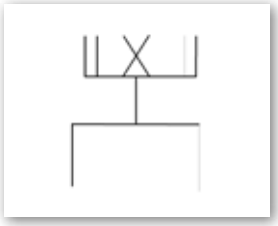

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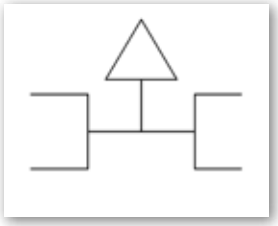

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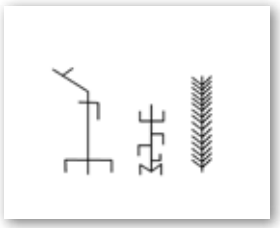
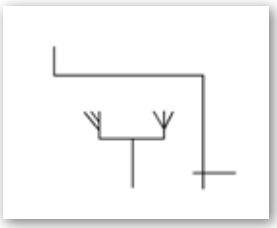
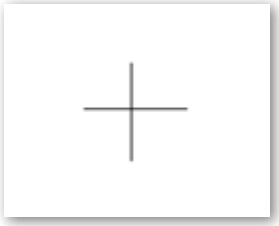


Sign No. 28.25C

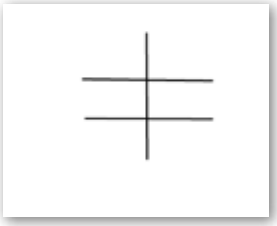


Sign No. 28.26C

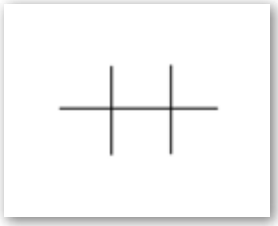
Sign No.29-Base & Its Varients



Sign No. 29.0



Sign No. 29.1



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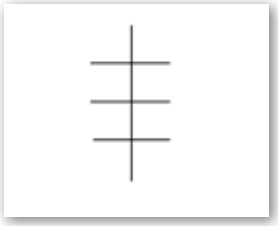

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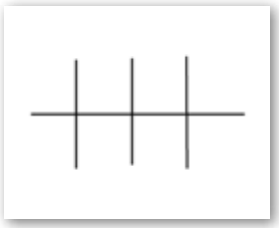

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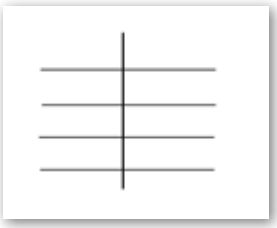

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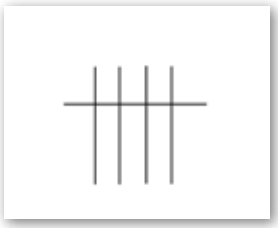

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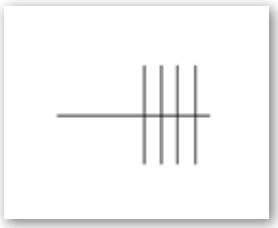
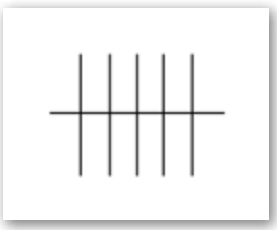


Sign No. 29.7

Sign No. 29.8



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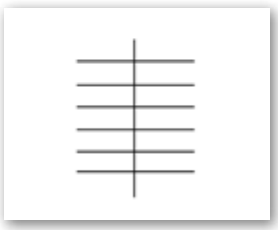

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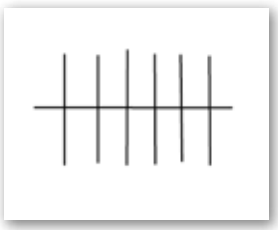
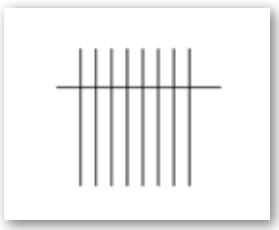
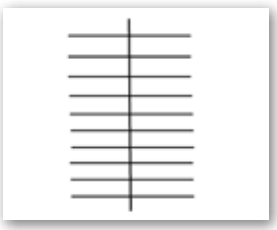


Sign No. 29.11



Sign No. 29.12



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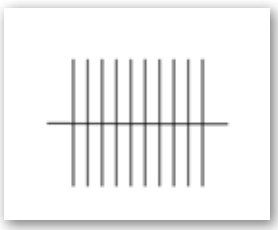

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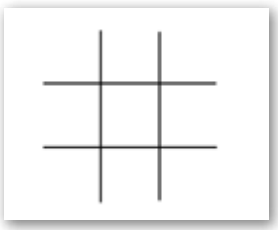
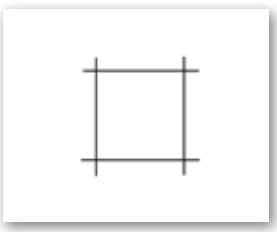
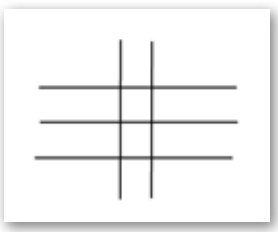


Sign No. 29.15

Sign No. 29.16



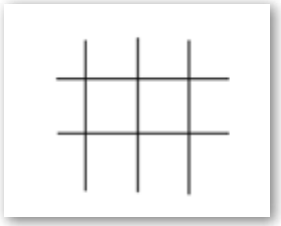
Sign No. 29.17



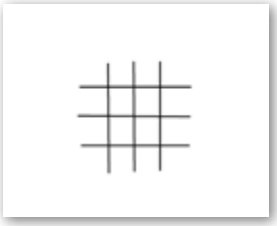
Sign No. 29.18

Sign No. 29.19

Sign No.29-Base & Its Varients



Sign No. 29.20



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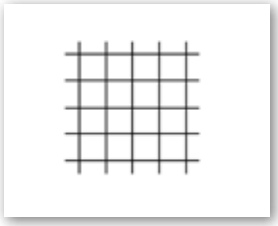

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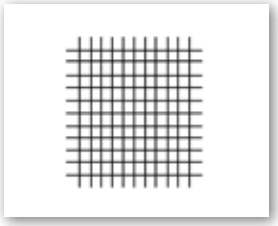
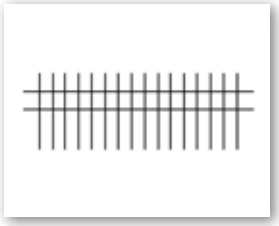
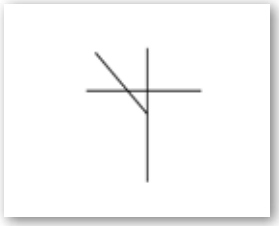


Sign No. 29.23

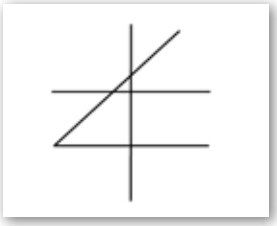


Sign No. 29.24

Sign No.29-Composites



Sign No. 29.1C



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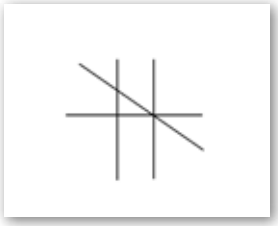

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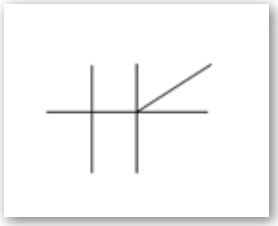

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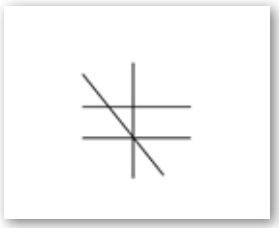

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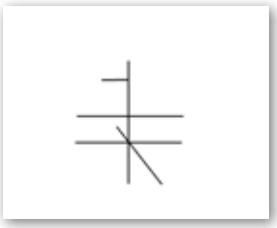

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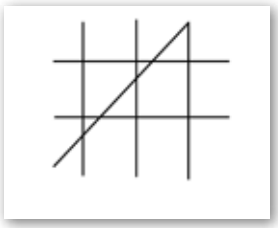

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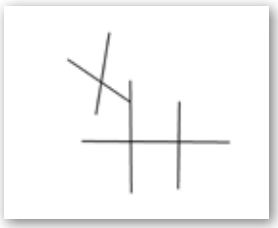

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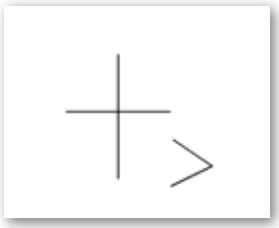

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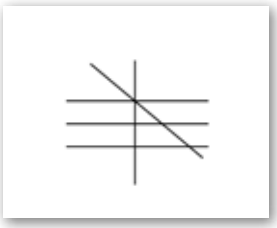

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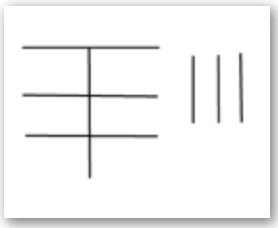

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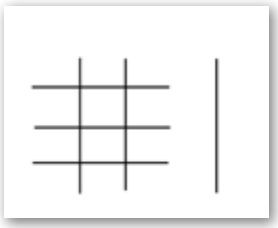

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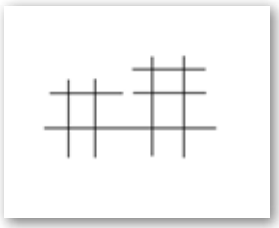

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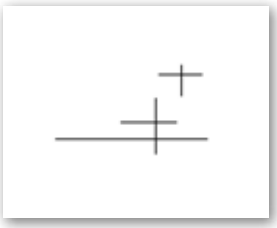

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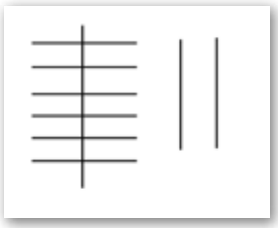

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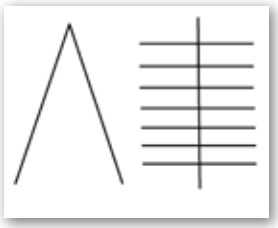
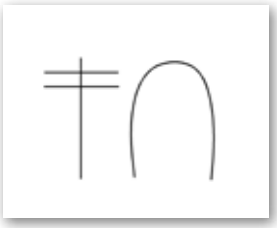


Sign No. 29.16C

Sign No. 29.17C



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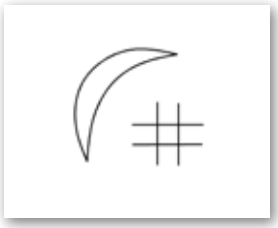
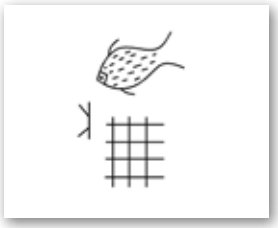
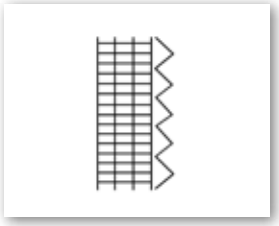


Sign No. 29.19C

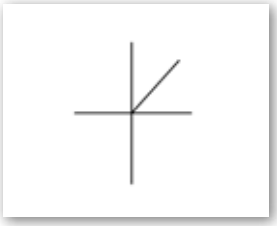


Sign No. 29.20C

Sign No.29-Composites

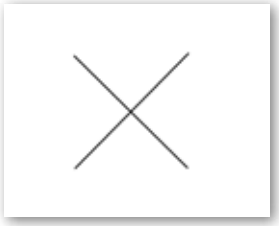


Sign No. 29.21C



Sign No. 29.22C

Sign No.30-Base & Its Variants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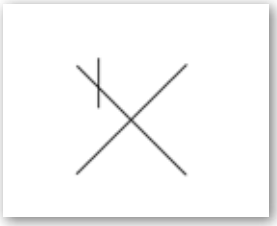
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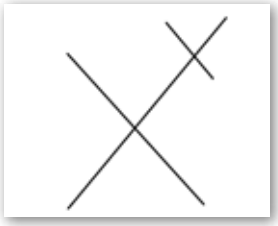
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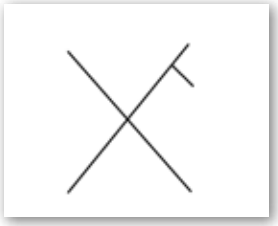
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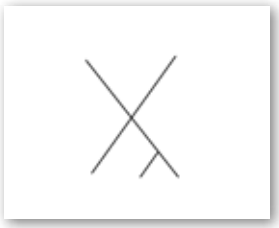
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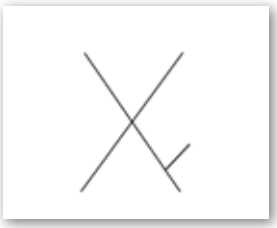
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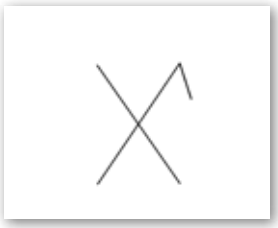
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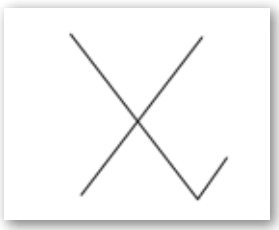
Sign No. 30.7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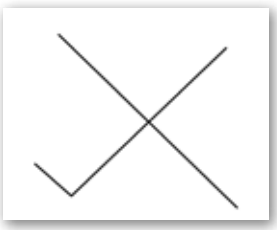
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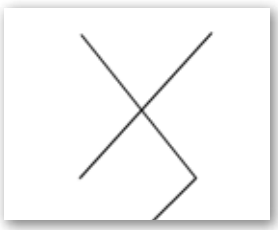
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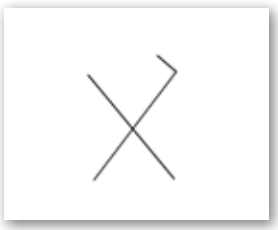
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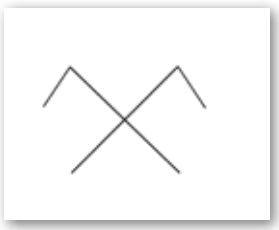
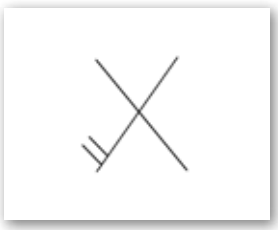

Sign No. 30.12

Sign No. 30.13

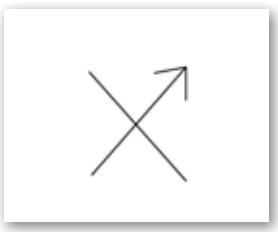

Sign No. 30.14

Sign No. 30.15

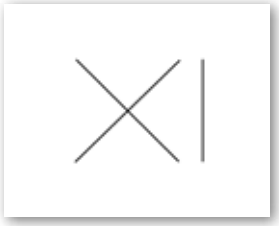
Sign No. 30.16

Sign No. 30.17

Sign No. 30.18

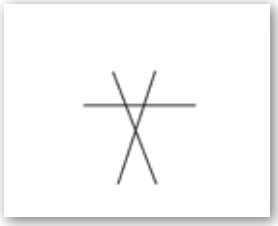

Sign No. 30.19

Sign No.30-Composites



Sign No. 30.1C

Sign No. 30.2C

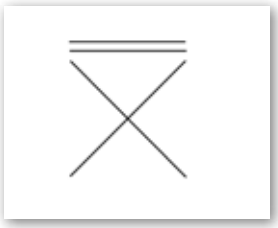


Sign No. 30.3C

Sign No. 30.4C

Sign No. 30.5C

Sign No. 30.6C



Sign No. 30.7C

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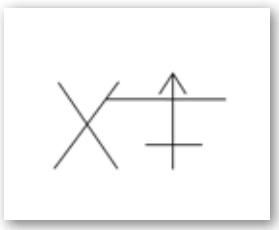
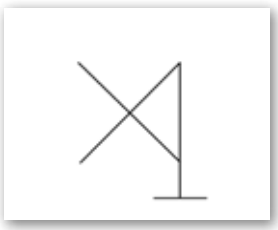


Sign No. 30.9C

Sign No. 30.10C



Sign No. 30.11C

Sign No. 30.12C

Sign No. 30.13C

Sign No. 30.14C

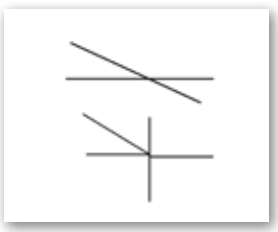
Sign No. 30.15C

Sign No. 30.16C

Sign No. 30.17C

Sign No. 30.18C

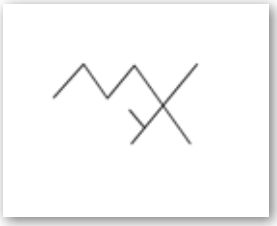
Sign No. 30.19C



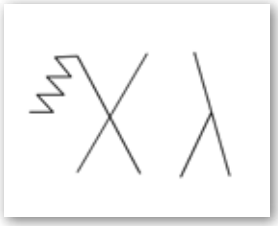
Sign No. 30.20C

Sign No.30-Composites

Sign No. 30.21C



Sign No. 30.22C

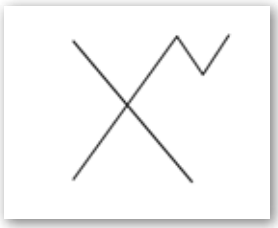


Sign No. 30.23C

Sign No. 30.24C

Sign No. 30.25C

Sign No. 30.26C



Sign No. 30.27C

Sign No. 30.28C

Sign No. 30.29C

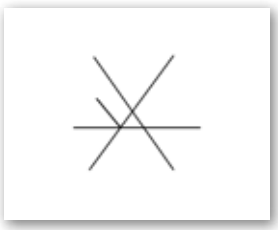
Sign No. 30.30C

Sign No. 30.31C

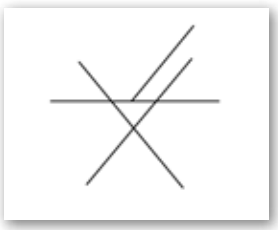
Sign No. 30.32C

Sign No. 30.33C

Sign No. 30.34C

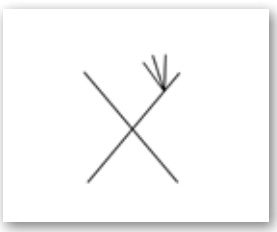


Sign No. 30.35C



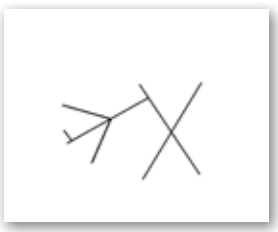
Sign No. 30.36C

Sign No. 30.37C



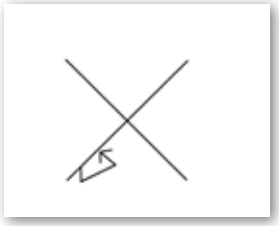
Sign No. 30.38C

Sign No. 30.39C

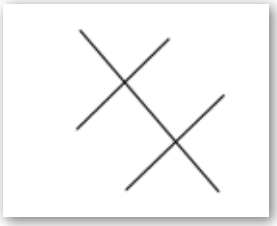


Sign No. 30.40C

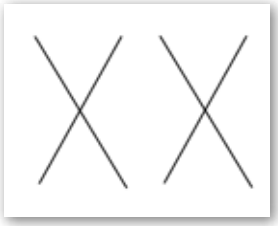
Sign No.30-Composites



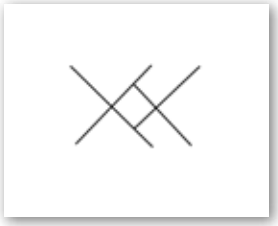
Sign No. 30.41C



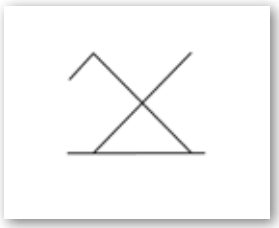
Sign No. 30.42C



Sign No. 30.43C



Sign No. 30.44C



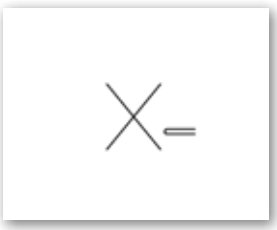
Sign No. 30.45C

Sign No. 30.46C

Sign No. 30.47C

Sign No. 30.48C

Sign No. 30.49C



Sign No. 30.50C

Sign No. 30.51C

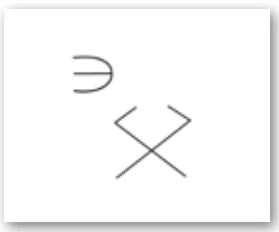
Sign No. 30.52C

Sign No. 30.53C

Sign No. 30.54C

Sign No. 30.55C

Sign No. 30.56C



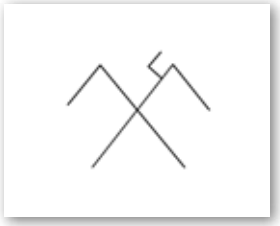
Sign No. 30.57C

Sign No. 30.58C

Sign No. 30.59C

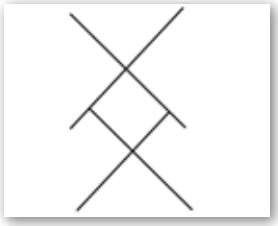
Sign No. 30.60C

Sign No.30-Composites



Sign No. 30.61C

Sign No. 30.62C



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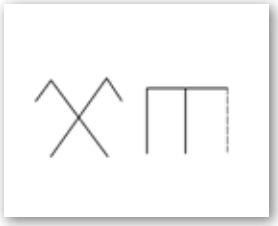
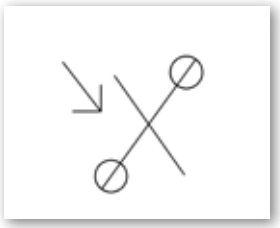


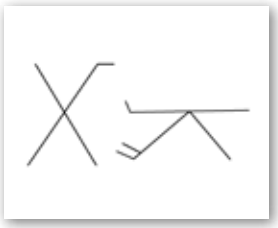
Sign No. 30.64C



Sign No. 30.65C

Sign No. 30.66C

Sign No. 30.67C

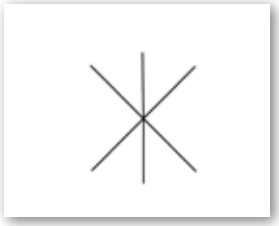


Sign No. 30.68C

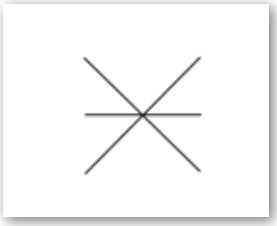
Sign No. 30.69C

Sign No. 30.70C

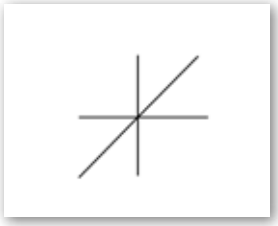
Sign No.31-Base & Its Varients



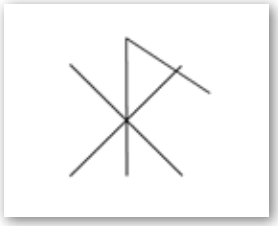
Sign No. 31.0



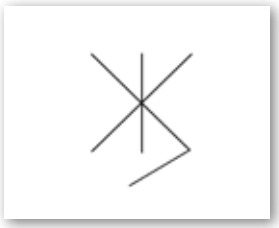
Sign No. 31.1



Sign No. 31.2



Sign No. 31.3



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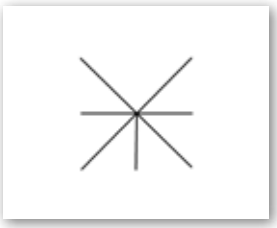
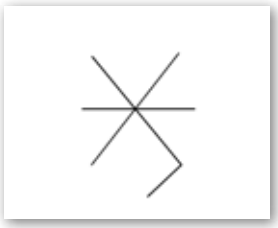


Sign No. 31.5



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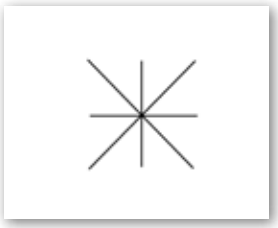
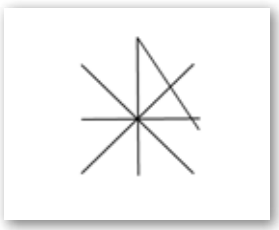
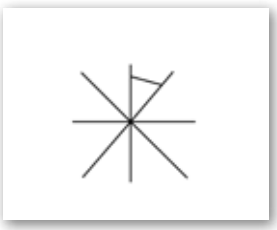


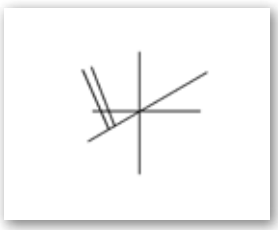
Sign No. 31.7



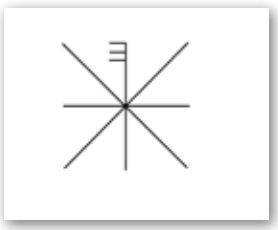
Sign No. 31.8



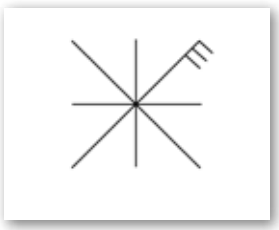
Sign No. 31.9



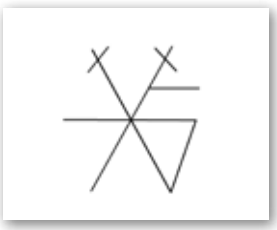
Sign No. 31.10



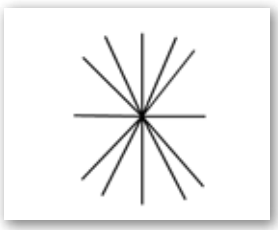
Sign No. 31.11



Sign No. 31.12

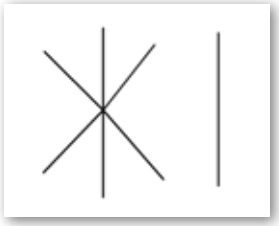


Sign No. 31.13



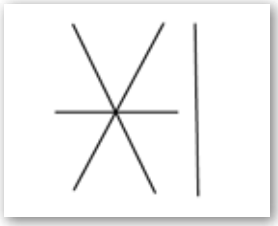
Sign No. 31.14

Sign No.31-Composites



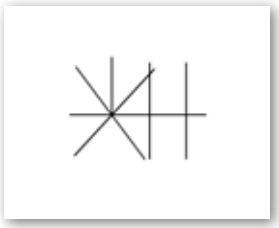
Sign No. 31.1C

Sign No. 31.2C



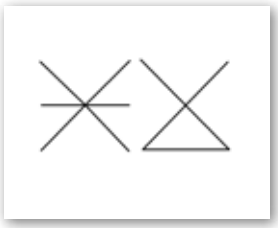
Sign No. 31.3C

Sign No. 31.4C

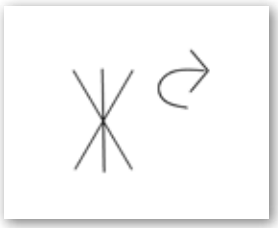


Sign No. 31.5C

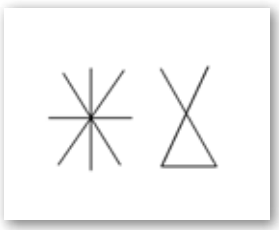
Sign No. 31.6C



Sign No. 31.7C

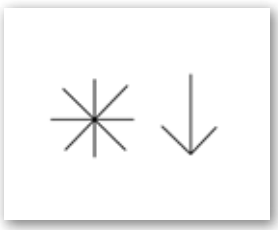


Sign No. 31.8C

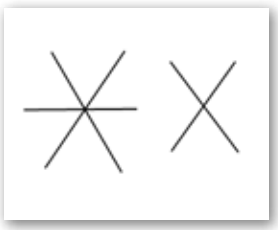


Sign No. 31.9C

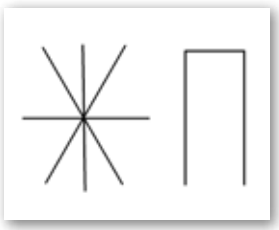
Sign No. 31.10C



Sign No. 31.11C

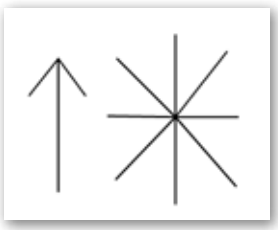


Sign No. 31.12C



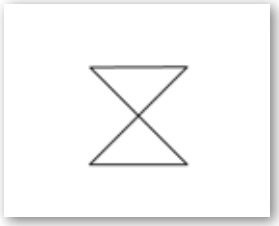
Sign No. 31.13C

Sign No. 31.14C

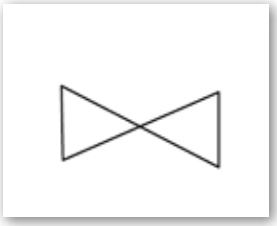


Sign No. 31.15C

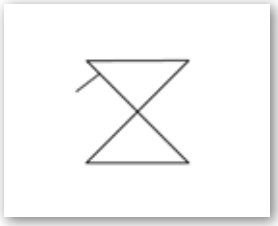
Sign No.32-Base & Its Variants



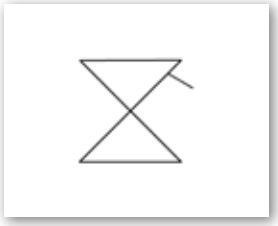
Sign No. 32.0



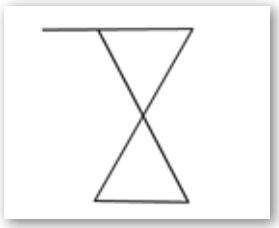
Sign No. 32.1



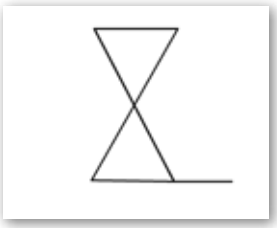
Sign No. 32.2



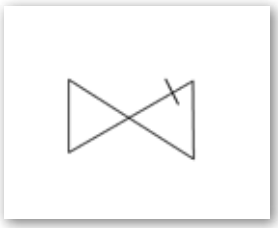
Sign No. 32.3



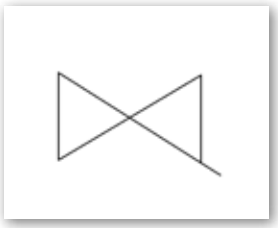
Sign No. 32.4



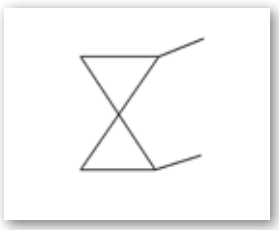
Sign No. 32.5



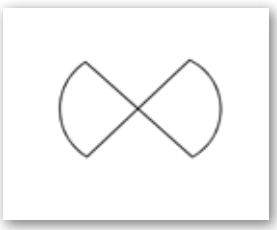
Sign No. 32.6



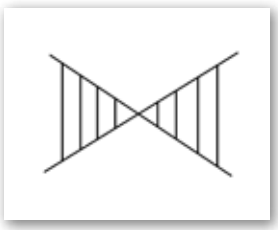
Sign No. 32.7



Sign No. 32.8

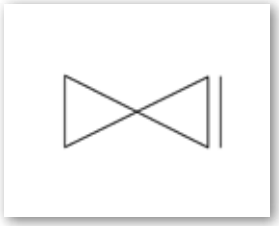


Sign No. 32.9

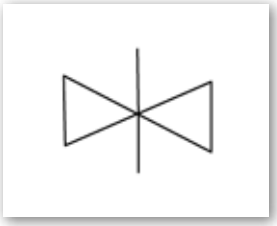


Sign No. 32.10

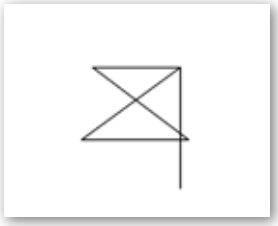
Sign No.32-Composites



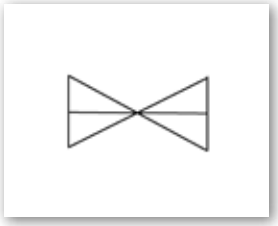
Sign No. 32.1C



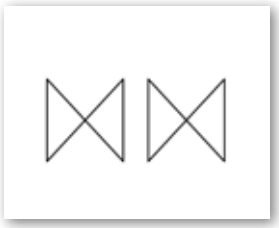
Sign No. 32.2C



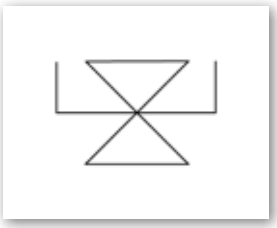
Sign No. 32.3C



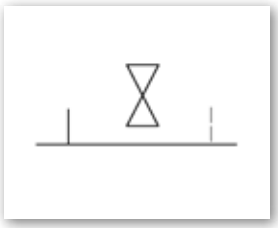
Sign No. 32.4C



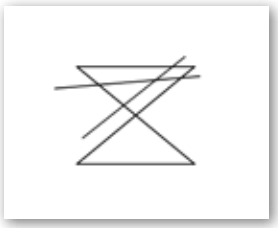
Sign No. 32.5C



Sign No. 32.6C



Sign No. 32.7C

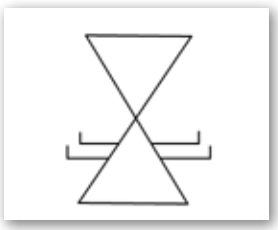


Sign No. 32.8C

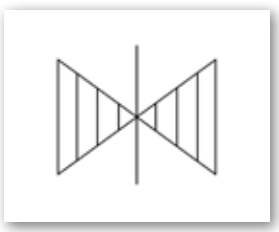
Sign No. 32.9C

Sign No. 32.10C

Sign No. 32.11C



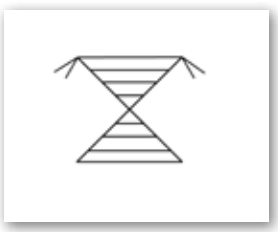
Sign No. 32.12C



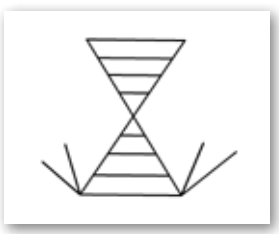
Sign No. 32.13C

Sign No. 32.14C

Sign No. 32.15C

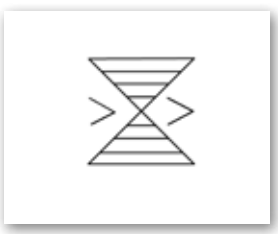


Sign No. 32.16C



Sign No. 32.17C

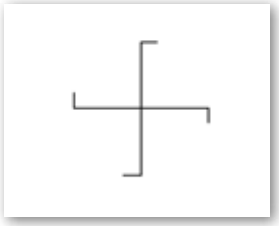
Sign No. 32.18C



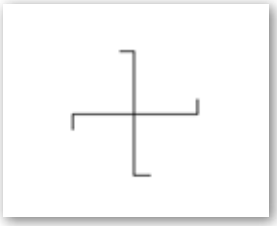
Sign No. 32.19C

Sign No. 32.20C

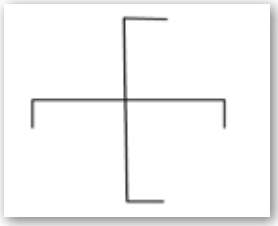
Sign No.33-Base & its Variants



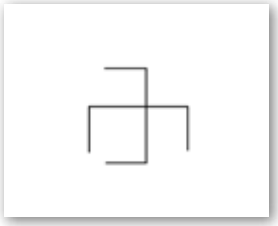
Sign No. 33.0



Sign No. 33.1



Sign No. 33.2



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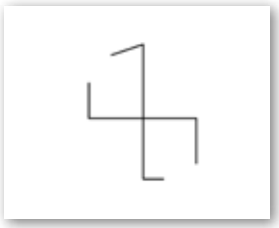

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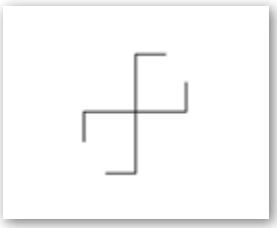

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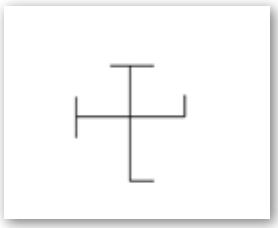

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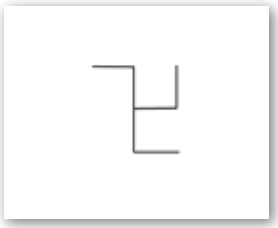

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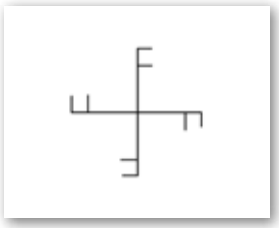

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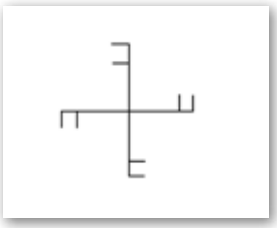

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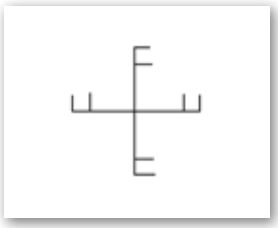

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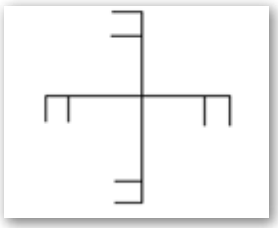

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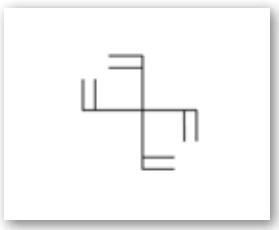

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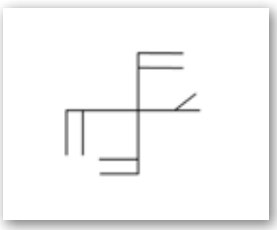

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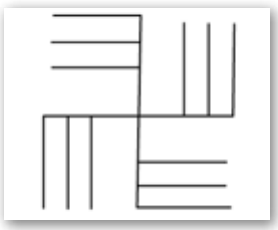

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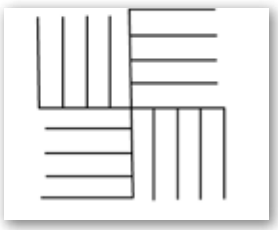

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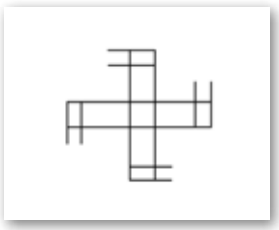
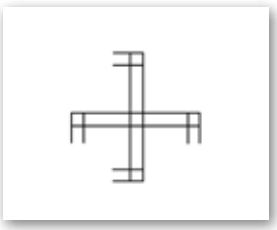
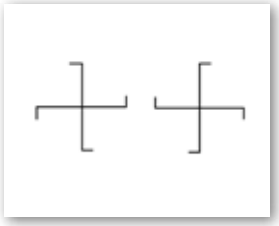


Sign No. 33.16

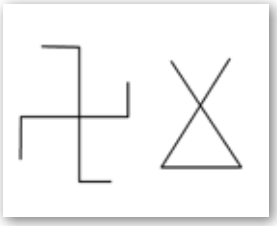


Sign No. 33.17

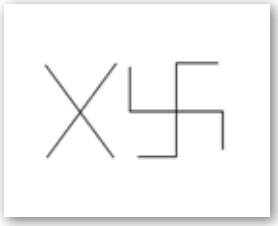
Sign No.33-Composites



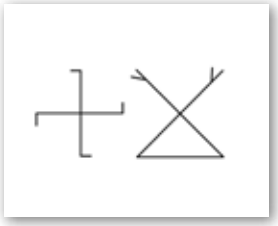
Sign No. 33.1C



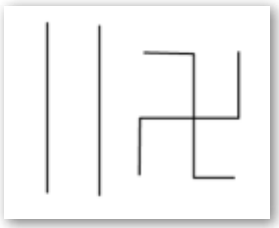
Sign No. 33.2C



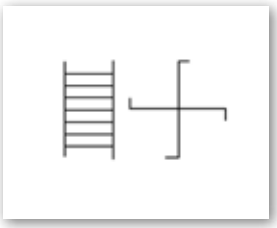
Sign No. 33.3C



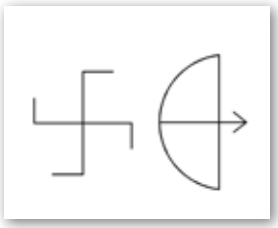
Sign No. 33.4C



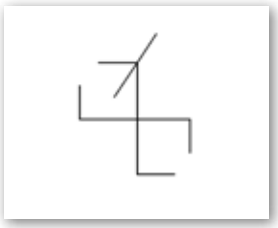
Sign No. 33.5C



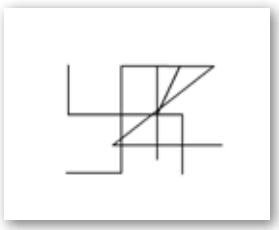
Sign No. 33.6C



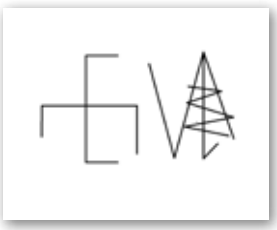
Sign No. 33.7C



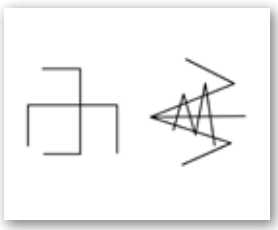
Sign No. 33.8C



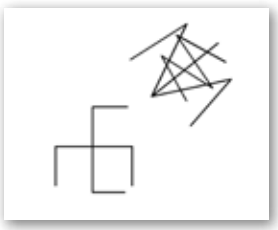
Sign No. 33.9C



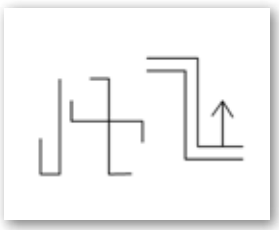
Sign No. 33.10C



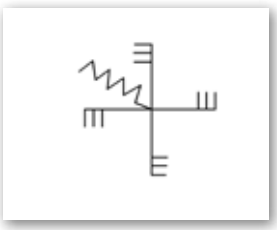
Sign No. 33.11C



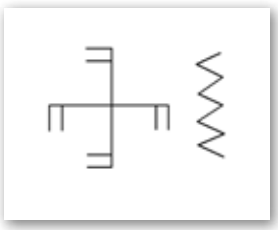
Sign No. 33.12C



Sign No. 33.13C

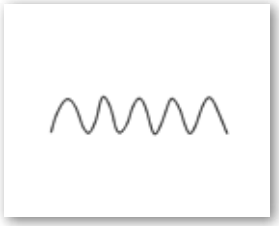


Sign No. 33.14C

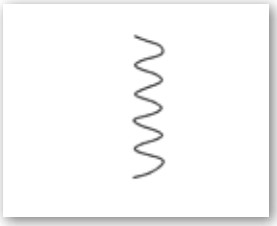


Sign No. 33.15C

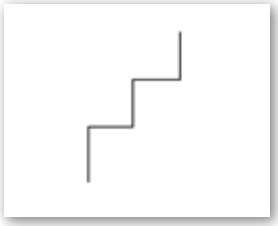
Sign No.34-Base & Its Varients



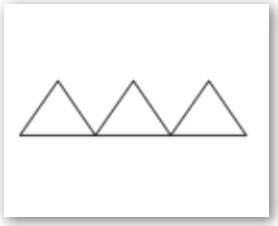
Sign No. 34.0



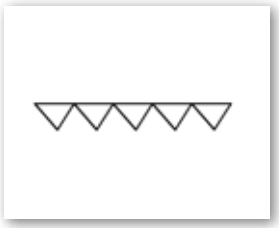
Sign No. 34.1



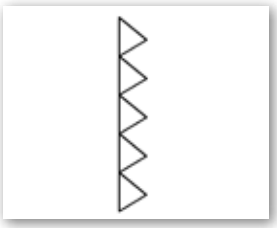
Sign No. 34.2



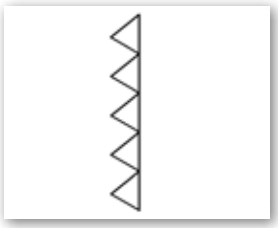
Sign No. 34.3



Sign No. 34.4

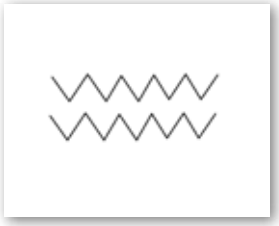


Sign No. 34.5

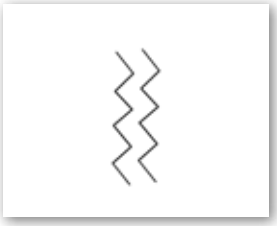


Sign No. 34.6

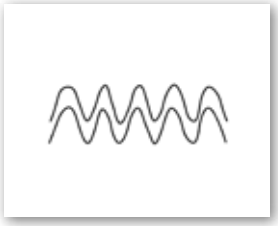
Sign No.34-Composites



Sign No. 34.1C

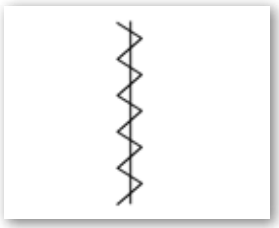


Sign No. 34.2C



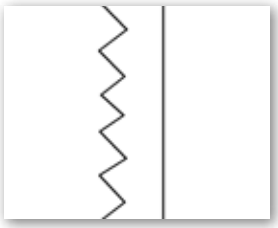
Sign No. 34.3C

Sign No. 34.4C

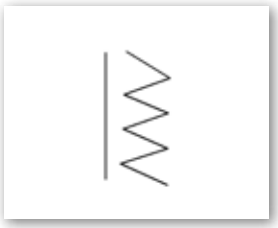


Sign No. 34.5C

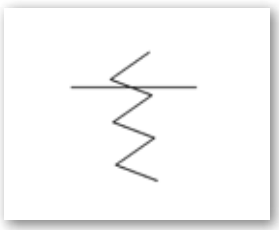
Sign No. 34.6C



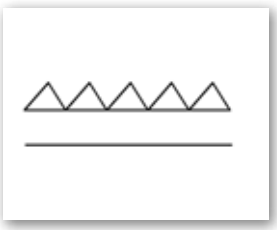
Sign No. 34.7C



Sign No. 34.8C



Sign No. 34.9C



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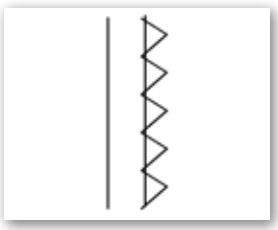

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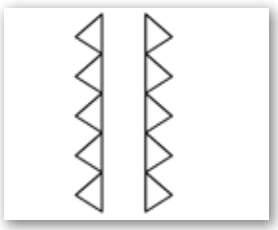

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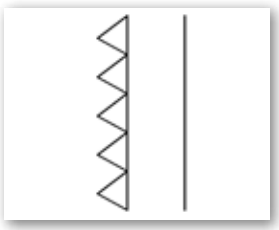

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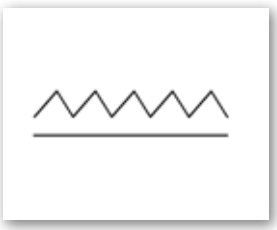

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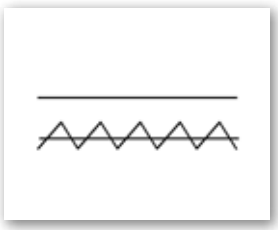

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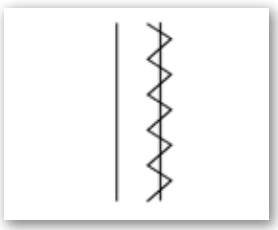

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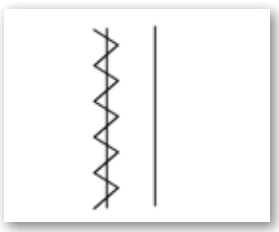

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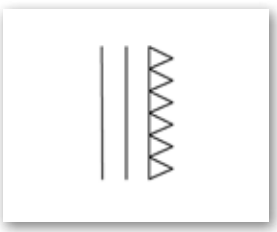

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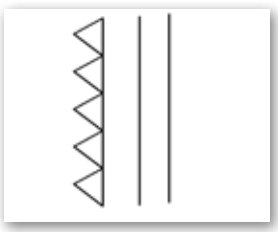

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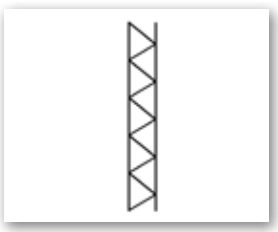
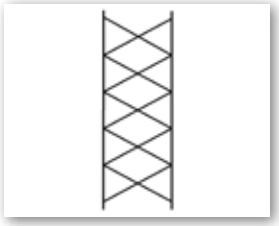


Sign No. 34.20C

Sign No.34-Composites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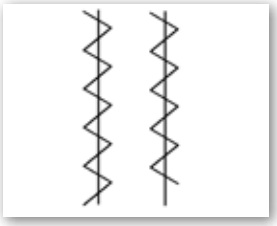
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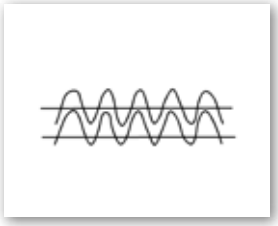
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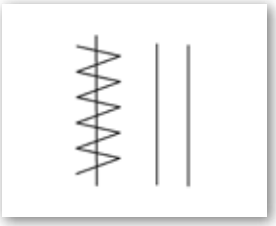
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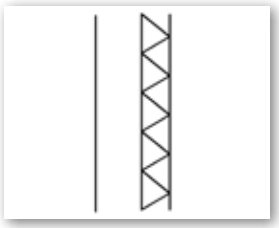
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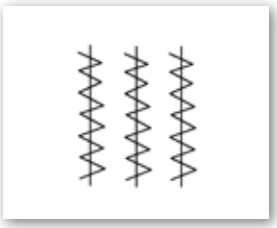
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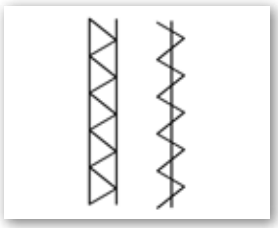
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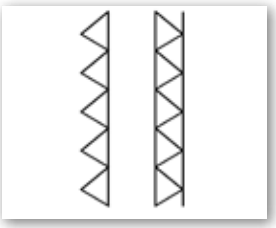
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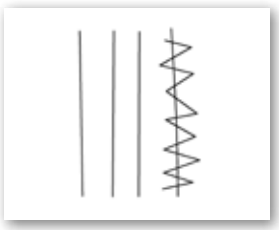
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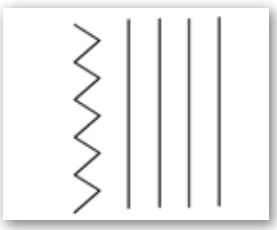
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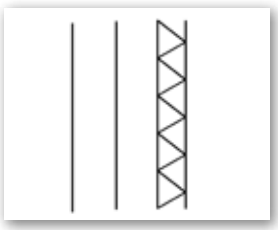
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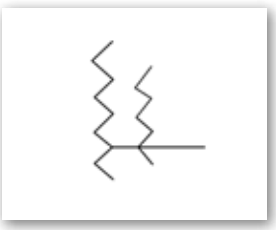
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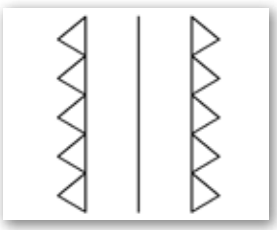
Sign No. 34.33C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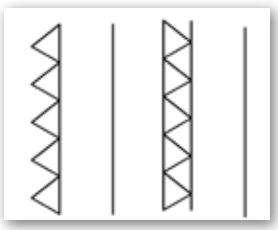
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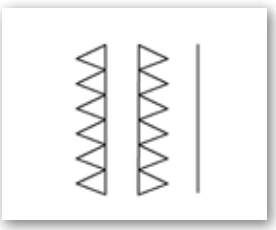
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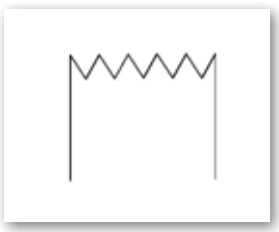
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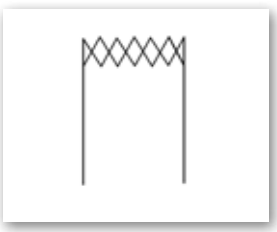
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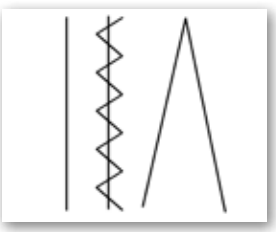
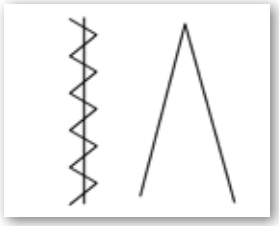
Sign No. 34.39C

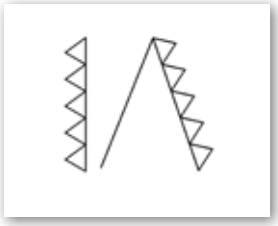

Sign No. 34.40C

Sign No.34-Composites



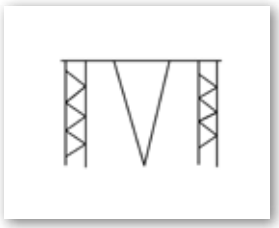
Sign No. 34.41C

Sign No. 34.42C

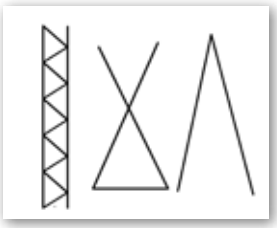


Sign No. 34.43C

Sign No. 34.44C



Sign No. 34.45C



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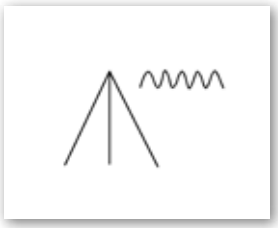
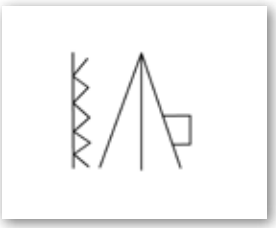
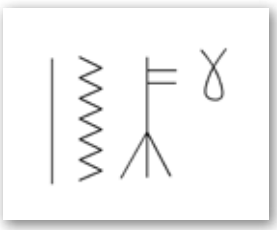


Sign No. 34.47C

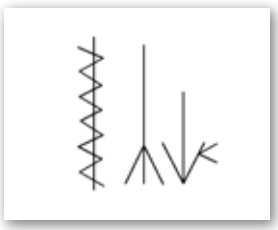


Sign No. 34.48C

Sign No. 34.49C



Sign No. 34.50C



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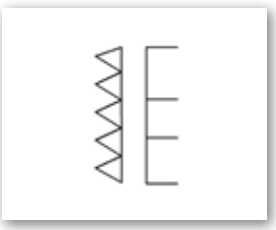

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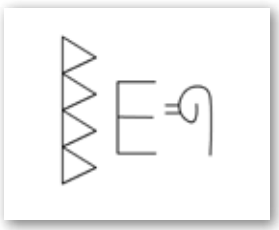
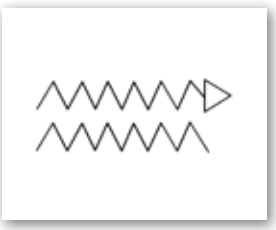


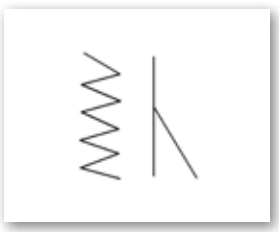
Sign No. 34.53C

Sign No. 34.54C

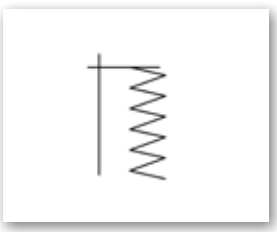
Sign No. 34.55C



Sign No. 34.56C



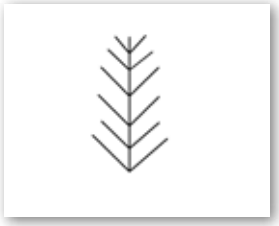
Sign No. 34.57C



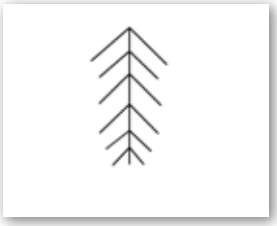
Sign No. 34.58C

Sign No. 34.59C

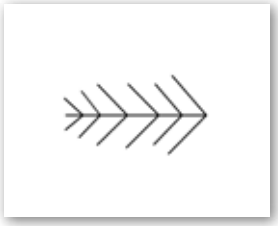
Sign No.35-Base & Its Variants



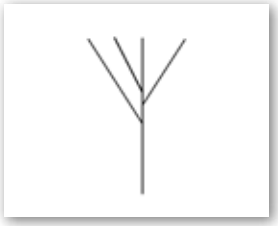
Sign No. 35.0



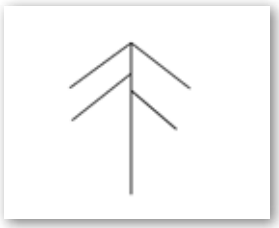
Sign No. 35.1



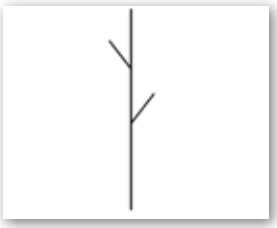
Sign No. 35.2



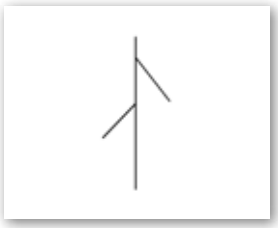
Sign No. 35.3



Sign No. 35.4



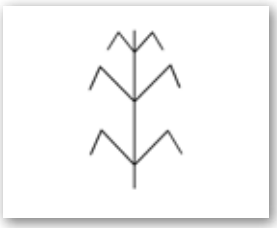
Sign No. 35.5



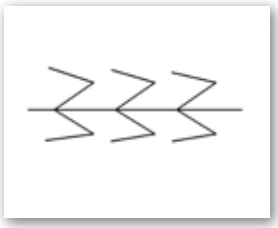
Sign No. 35.6

Sign No. 35.7

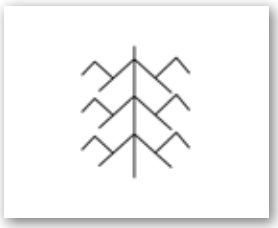
Sign No. 35.8



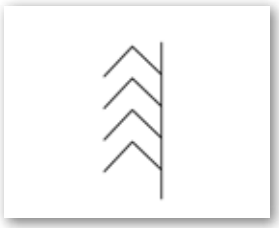
Sign No. 35.9



Sign No. 35.10

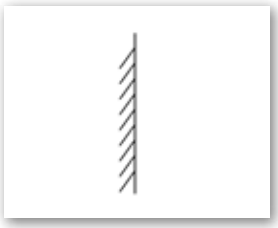


Sign No. 35.11

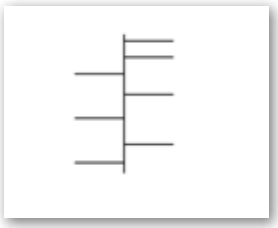


Sign No. 35.12

Sign No. 35.13



Sign No. 35.14



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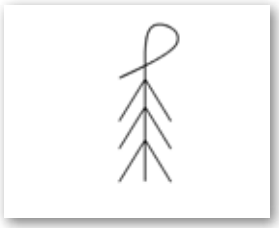

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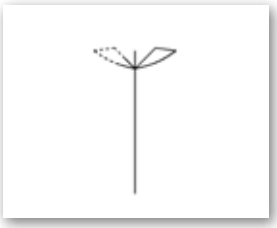
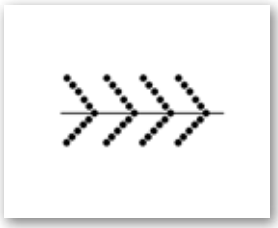
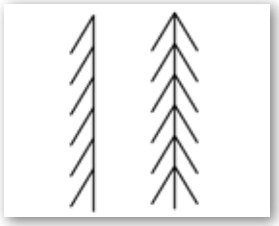


Sign No. 35.17

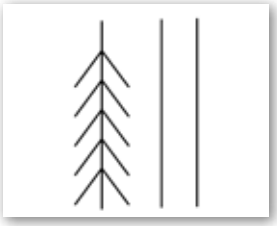


Sign No. 35.18

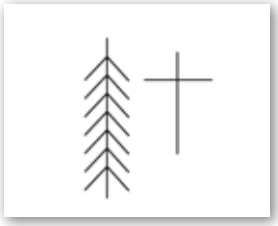
Sign No.35-Composites



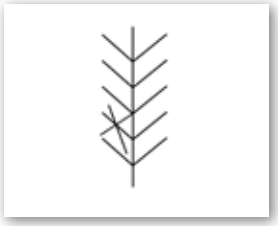
Sign No. 35.1C



Sign No. 35.2C

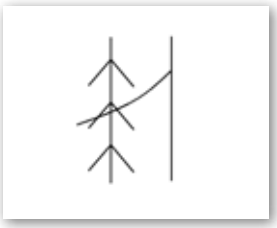


Sign No. 35.3C

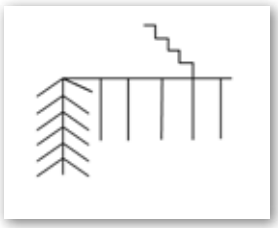


Sign No. 35.4C

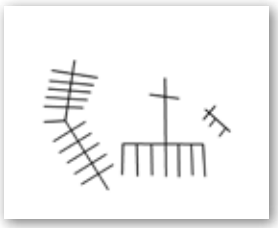
Sign No. 35.5C



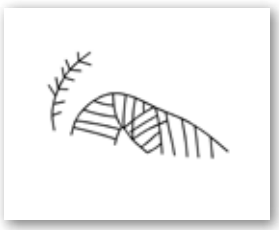
Sign No. 35.6C



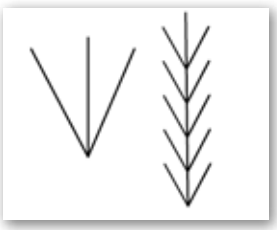
Sign No. 35.7C



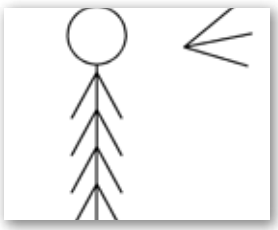
Sign No. 35.8C



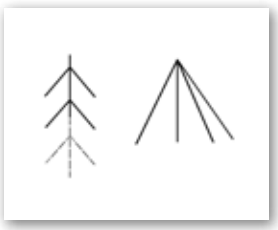
Sign No. 35.9C



Sign No. 35.10C



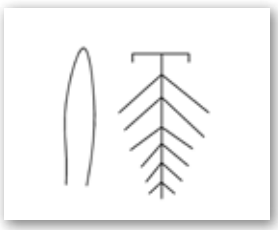
Sign No. 35.11C



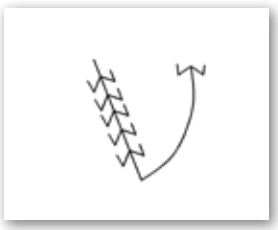
Sign No. 35.12C

Sign No. 35.13C

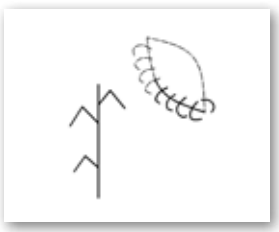
Sign No. 35.14C



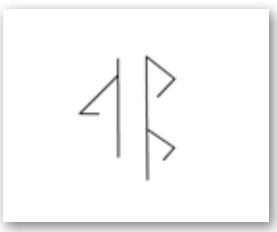
Sign No. 35.15C



Sign No. 35.16C

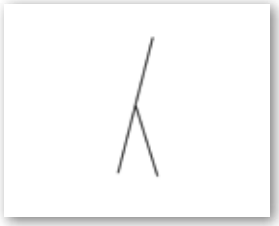


Sign No. 35.17C

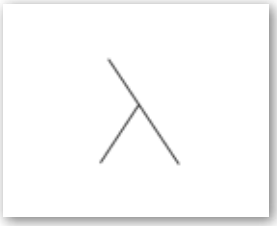


Sign No. 35.18C

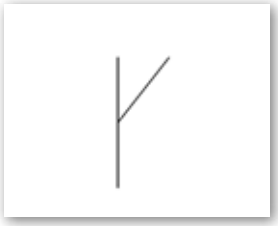
Sign No.36-Base & Its Variants



Sign No. 36.0

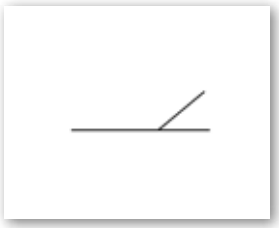


Sign No. 36.1



Sign No. 36.2

Sign No. 36.3



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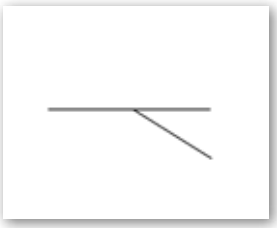

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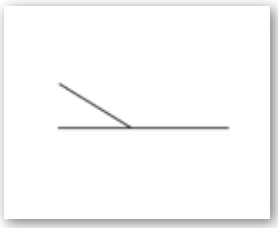
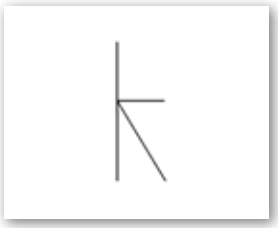
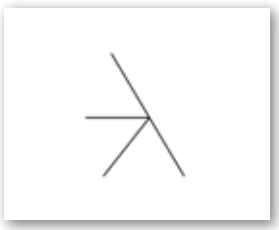


Sign No. 36.6



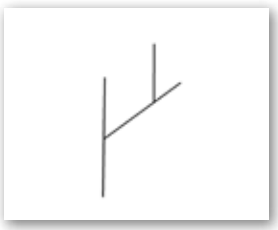
Sign No. 36.7



Sign No. 36.8

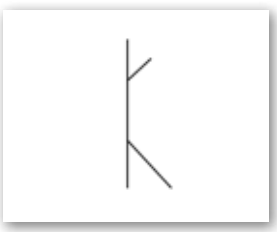
Sign No. 36.9

Sign No. 36.10



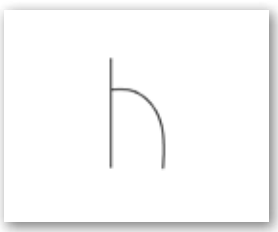
Sign No. 36.11

Sign No. 36.12

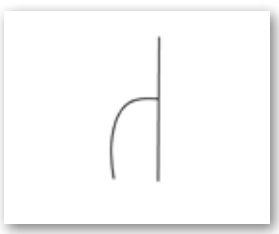


Sign No. 36.13

Sign No. 36.14



Sign No. 36.15



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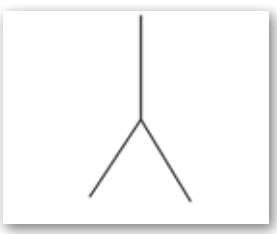
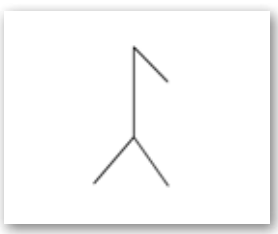


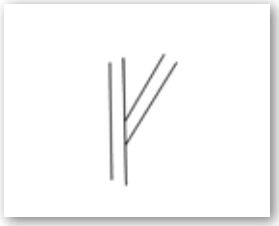
Sign No. 36.17



Sign No. 36.18

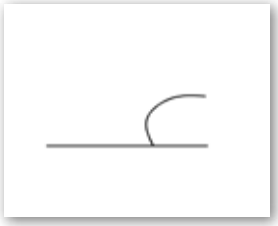
Sign No. 36.19

Sign No.36-Base & Its Variants

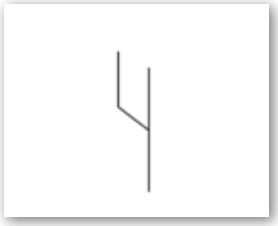


Sign No. 36.20

Sign No. 36.21



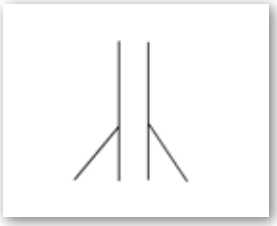
Sign No. 36.22



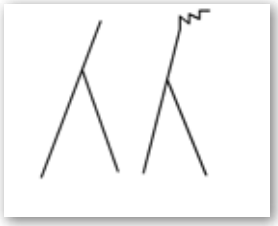
Sign No. 36.23

Sign No.36-Composites

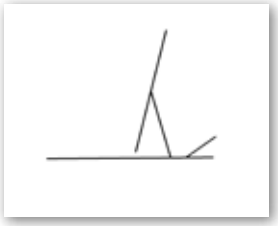
Sign No. 36.1C



Sign No. 36.2C



Sign No. 36.3C



Sign No. 36.4C

Sign No. 36.5C

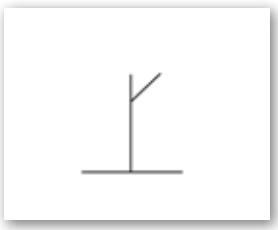
Sign No. 36.6C

Sign No. 36.7C

Sign No. 36.8C

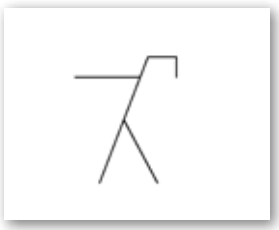
Sign No. 36.9C

Sign No. 36.10C



Sign No. 36.11C

Sign No. 36.12C



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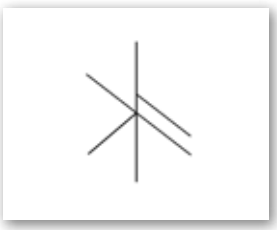
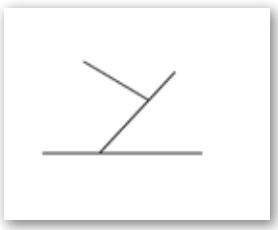
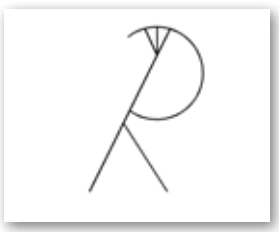


Sign No. 36.14C

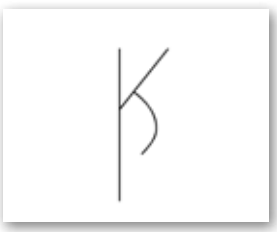


Sign No. 36.15C

Sign No. 36.16C

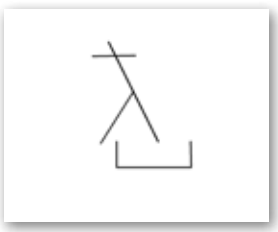


Sign No. 36.17C



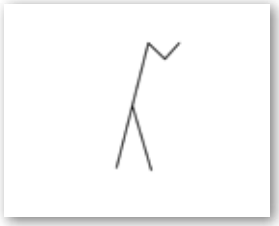
Sign No. 36.18C

Sign No. 36.19C

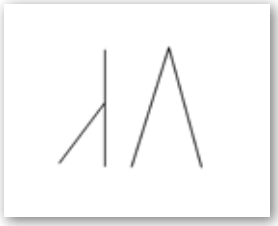


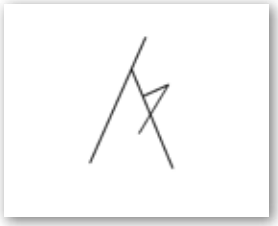
Sign No. 36.20C

Sign No.36-Composites

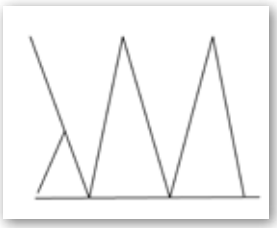

Sign No. 36.21C

Sign No. 36.22C


Sign No. 36.23C


Sign No. 36.24C

Sign No. 36.25C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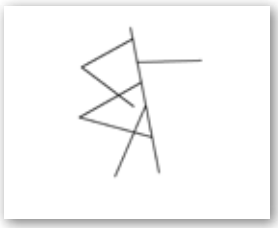
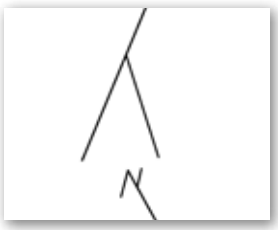

Sign No. 36.27C

Sign No. 36.28C

Sign No. 36.29C

Sign No. 36.30C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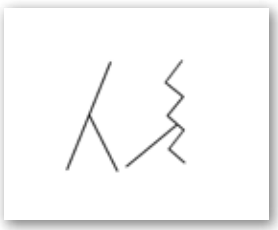
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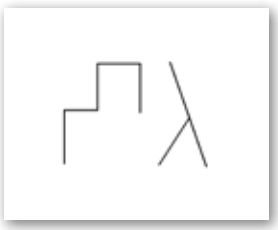
Sign No. 36.33C

Sign No. 36.34C

Sign No. 36.35C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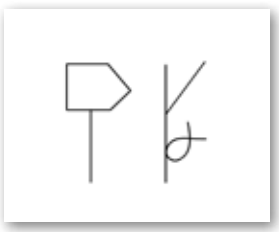
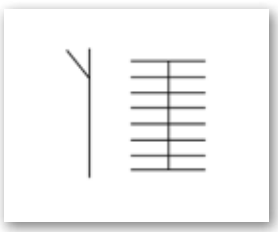

Sign No. 36.37C

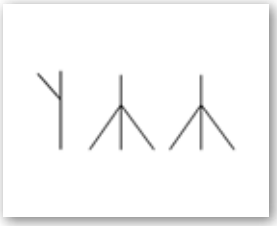
Sign No. 36.38C

Sign No. 36.39C

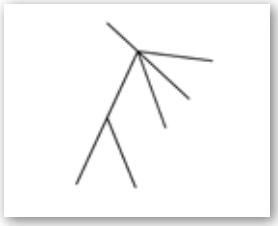

Sign No. 36.40C

Sign No.36-Composites

Sign No. 36.41C



Sign No. 36.42C



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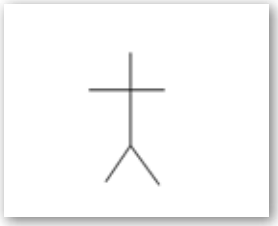

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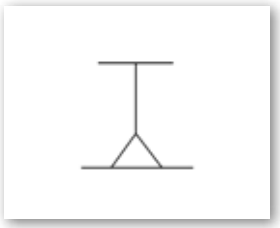
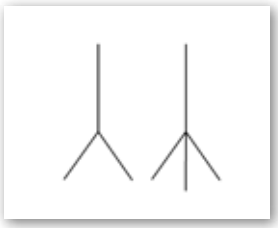


Sign No. 36.45C

Sign No. 36.46C



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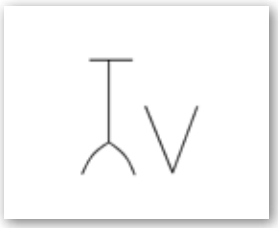
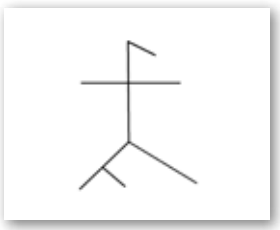


Sign No. 36.48C



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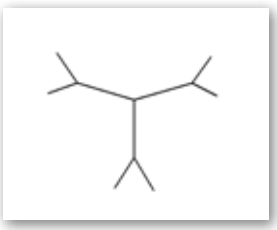
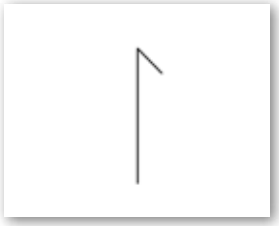


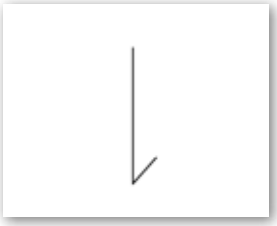
Sign No. 36.50C

Sign No. 36.51C

Sign No.37-Base & Its Variants

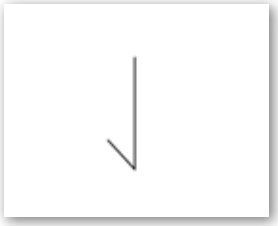


Sign No. 37.0

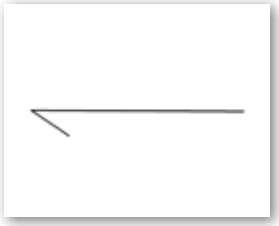


Sign No. 37.1

Sign No. 37.2



Sign No. 37.3



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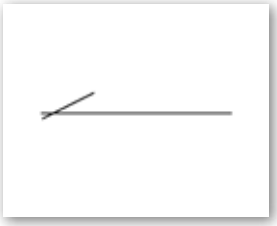

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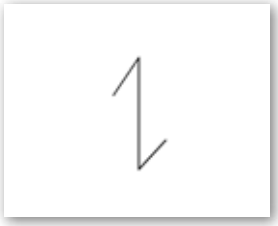

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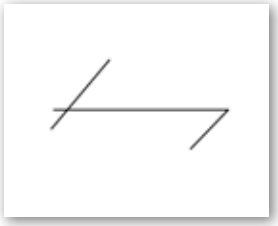
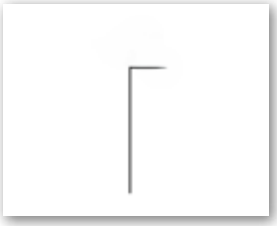


Sign No. 37.7

Sign No. 37.8



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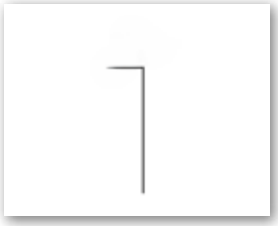
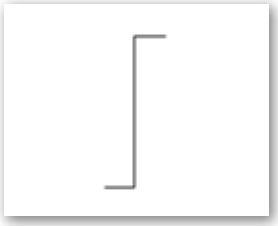
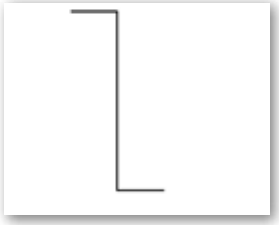


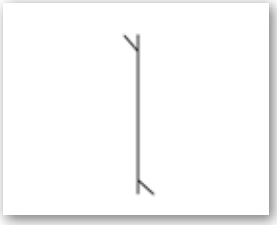
Sign No. 37.10



Sign No. 37.11



Sign No. 37.12



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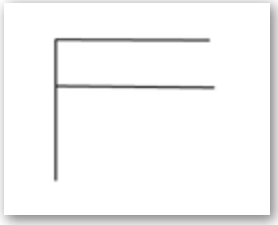
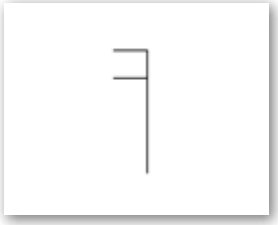
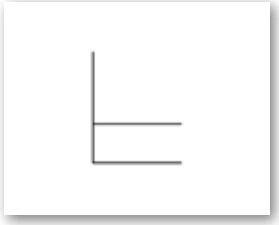


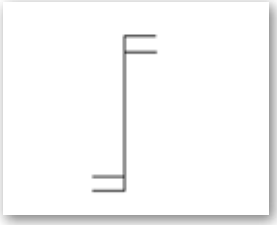
Sign No. 37.14



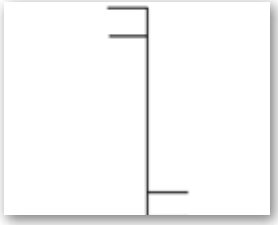
Sign No. 37.15



Sign No. 37.16



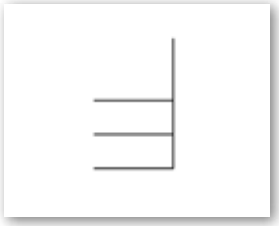
Sign No. 37.17



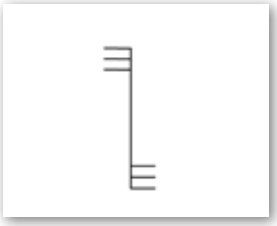
Sign No. 37.18

Sign No. 37.19

Sign No.37-Base & Its Variants

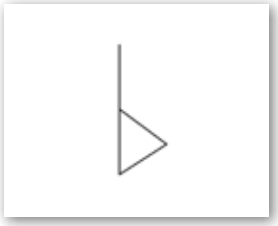


Sign No. 37.20

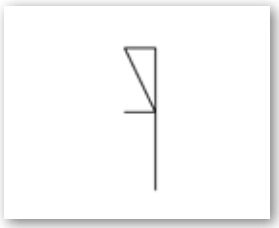


Sign No. 37.21

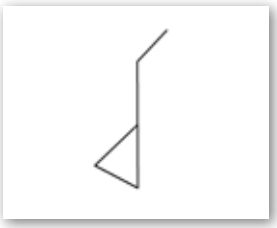
Sign No. 37.22



Sign No. 37.23



Sign No. 37.24



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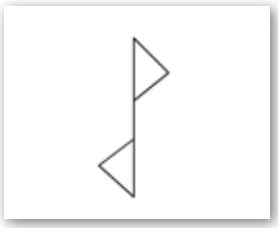
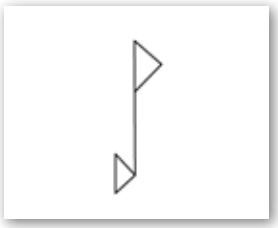
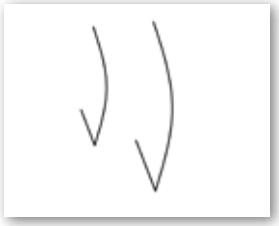


Sign No. 37.26

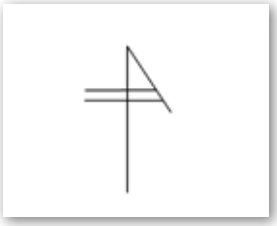


Sign No. 37.27

Sign No.37-Composites

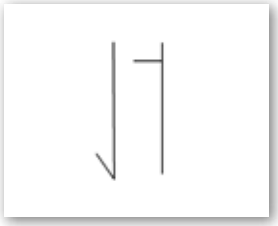


Sign No. 37.1C

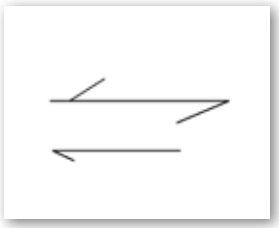


Sign No. 37.2C

Sign No. 37.3C

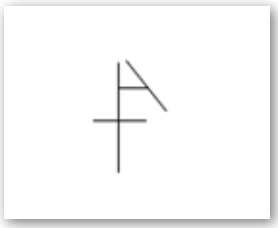


Sign No. 37.4C

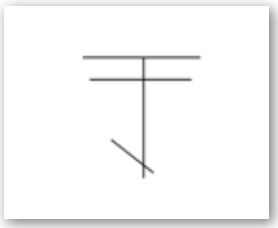


Sign No. 37.5C

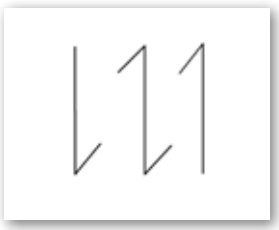
Sign No. 37.6C



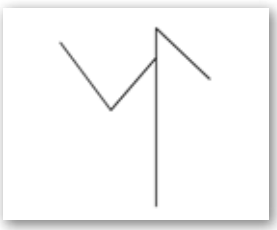
Sign No. 37.7C



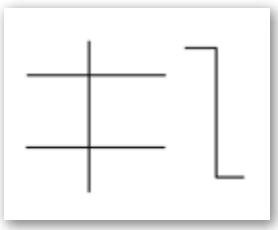
Sign No. 37.8C



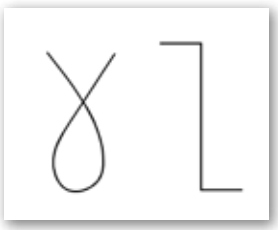
Sign No. 37.9C



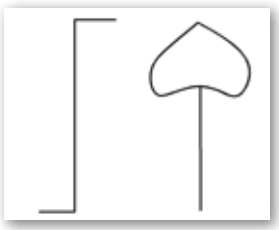
Sign No. 37.10C



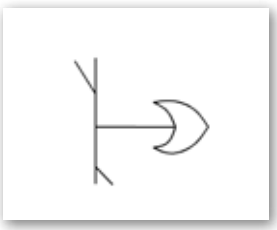
Sign No. 37.11C



Sign No. 37.12C

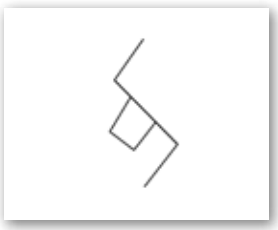


Sign No. 37.13C

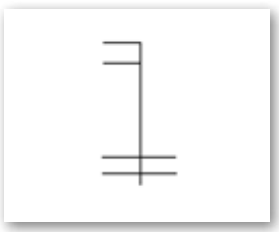


Sign No. 37.14C

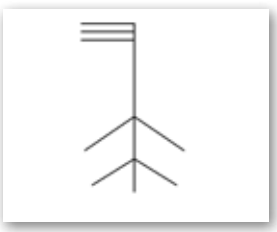
Sign No. 37.15C



Sign No. 37.16C

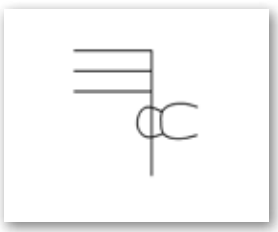


Sign No. 37.17C



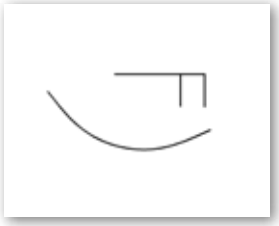
Sign No. 37.18C

Sign No. 37.19C



Sign No. 37.20C

Sign No.37-Composites

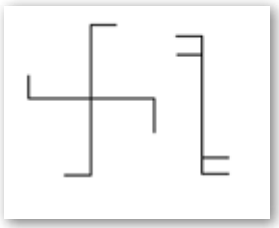


Sign No. 37.21C

Sign No. 37.22C

Sign No. 37.23C

Sign No. 37.24C



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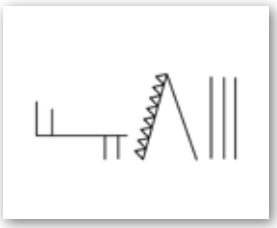

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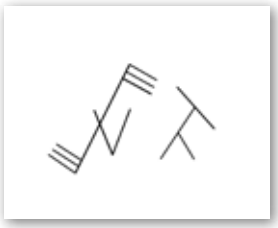

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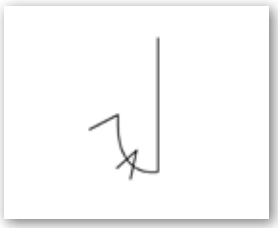

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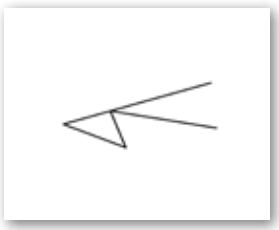

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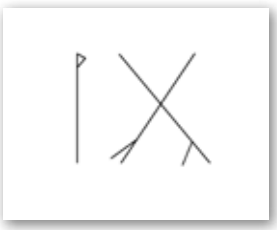

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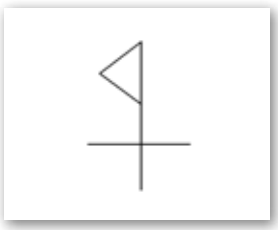

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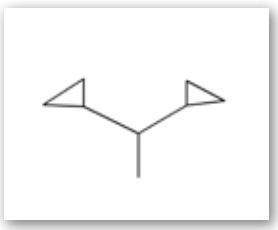

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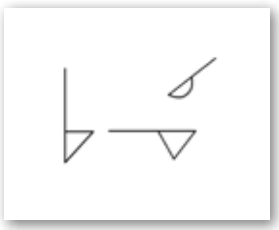

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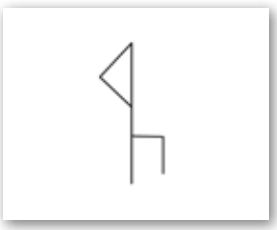

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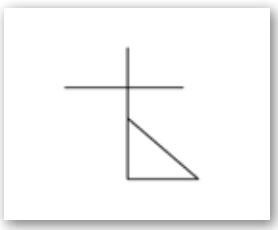

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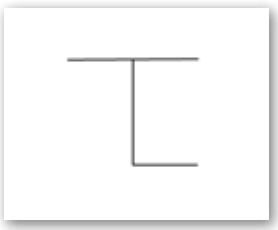

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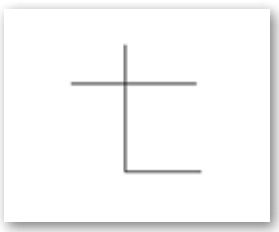

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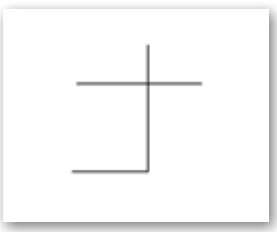
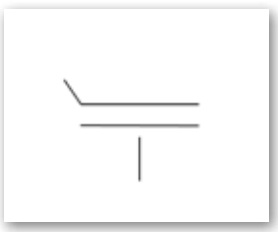


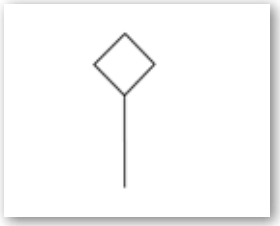
Sign No. 37.38C

Sign No. 37.39C

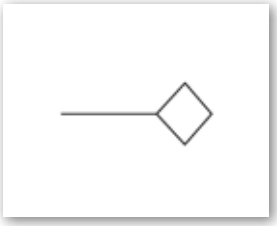


Sign No. 37.40C

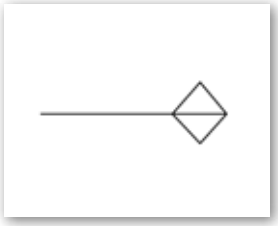
Sign No.38-Base & Its Variants



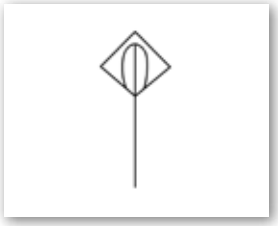
Sign No. 38.0



Sign No. 38.1



Sign No. 38.2



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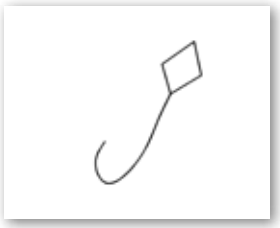

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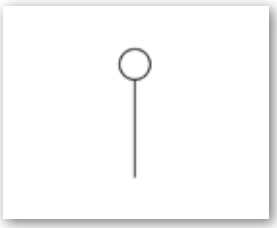

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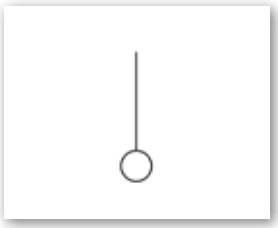

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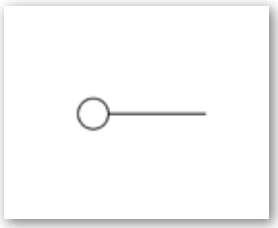

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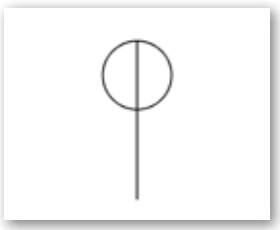

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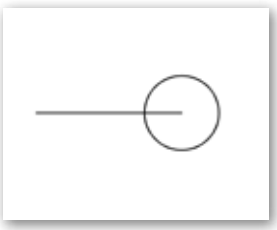
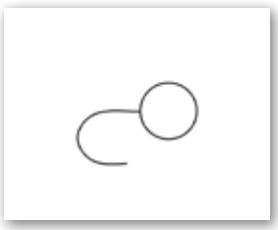
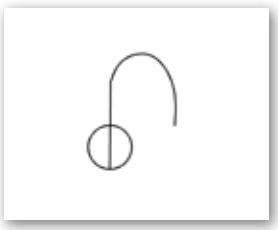


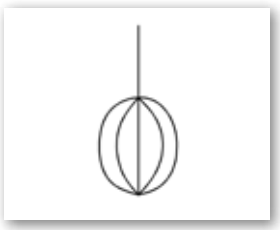
Sign No. 38.9



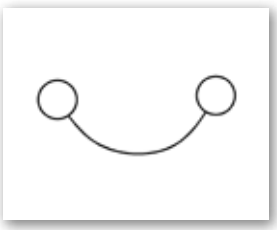
Sign No. 38.10



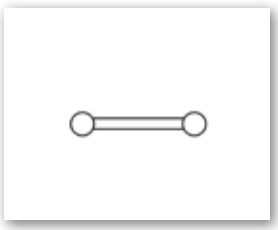
Sign No. 38.11



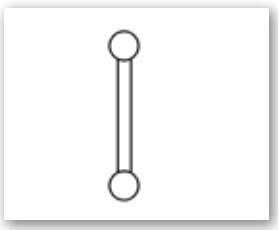
Sign No. 38.12



Sign No. 38.13

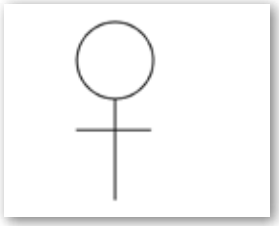


Sign No. 38.14

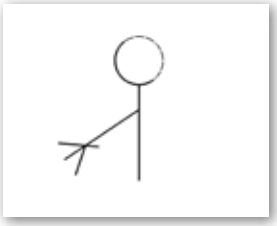


Sign No. 38.15

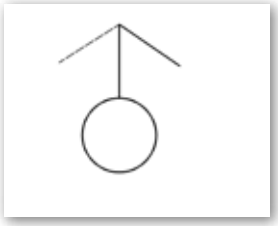
Sign No.38-Composites



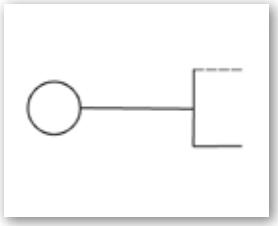
Sign No. 38.1C



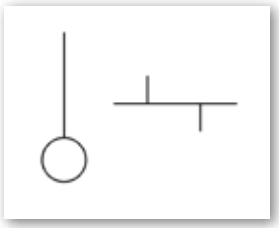
Sign No. 38.2C



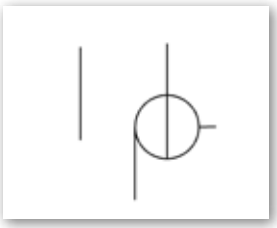
Sign No. 38.3C



Sign No. 38.4C



Sign No. 38.5C



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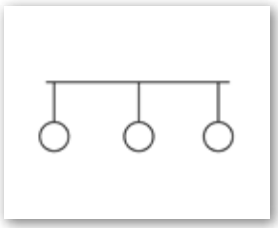
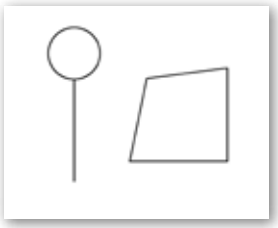
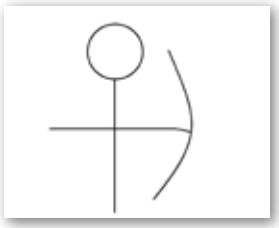


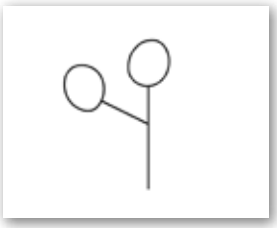
Sign No. 38.7C



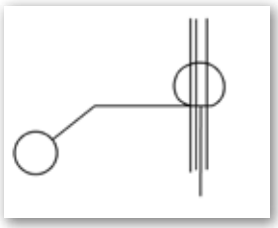
Sign No. 38.8C



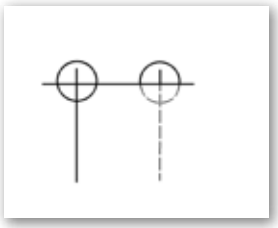
Sign No. 38.9C



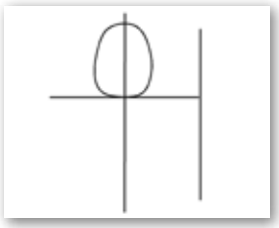
Sign No. 38.10C



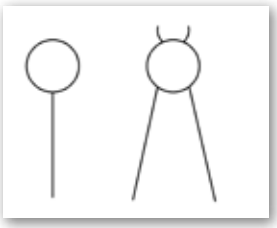
Sign No. 38.11C



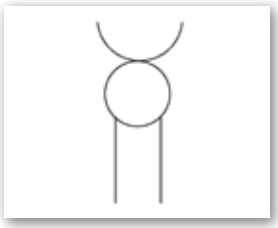
Sign No. 38.12C



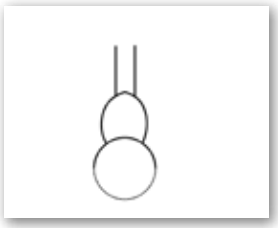
Sign No. 38.13C



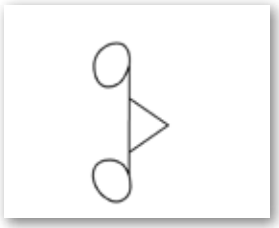
Sign No. 38.14C



Sign No. 38.15C



Sign No. 38.16C



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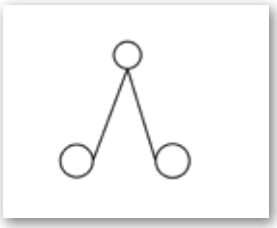
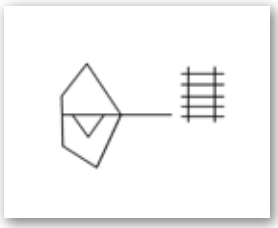
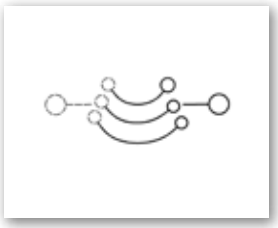


Sign No. 38.18C

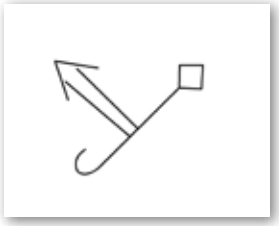


Sign No. 38.19C



Sign No. 38.20C

Sign No.38-Composites

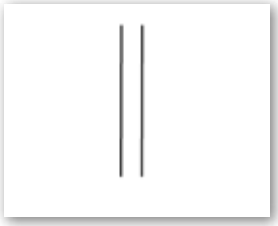


Sign No. 38.21C

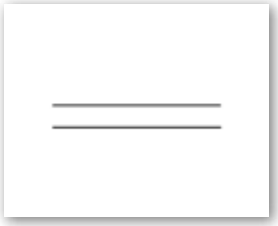
Sign No.39-Base & Its Variants

Sign No. 39.0

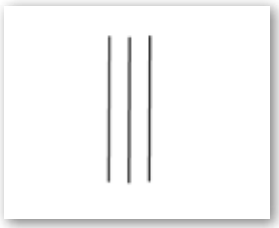
Sign No. 39.1



Sign No. 39.2

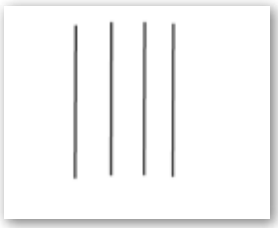


Sign No. 39.3



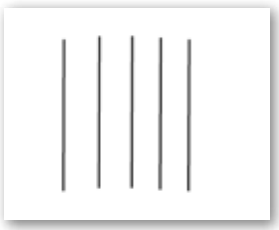
Sign No. 39.4

Sign No. 39.5



Sign No. 39.6

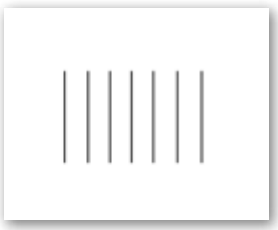
Sign No. 39.7



Sign No. 39.8

Sign No. 39.9

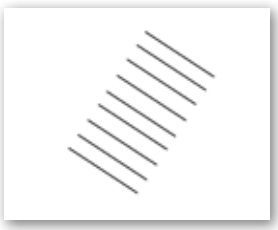
Sign No. 39.10



Sign No. 39.11

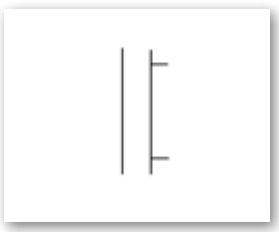
Sign No. 39.12

Sign No. 39.13



Sign No. 39.14

Sign No. 39.15

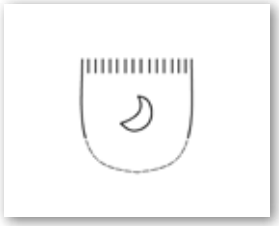


Sign No. 39.16

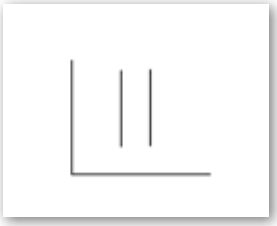
Sign No. 39.17

Sign No. 39.18

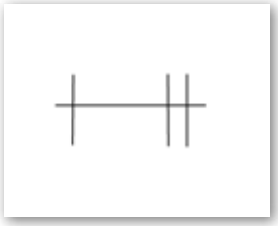
Sign No.39-Composites



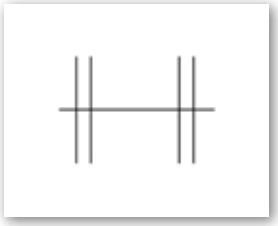
Sign No. 39.1C



Sign No. 39.2C

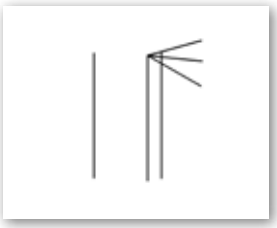


Sign No. 39.3C

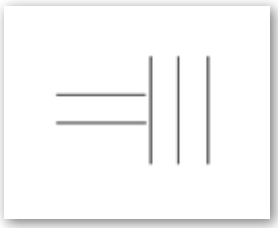


Sign No. 39.4C

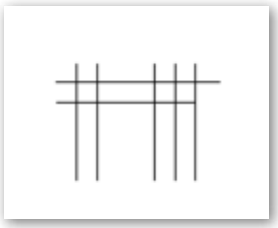
Sign No. 39.5C



Sign No. 39.6C

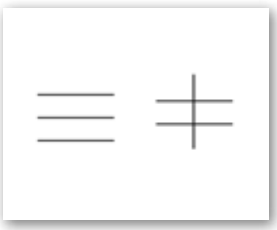


Sign No. 39.7C



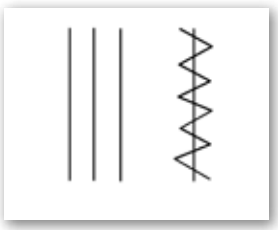
Sign No. 39.8C

Sign No. 39.9C

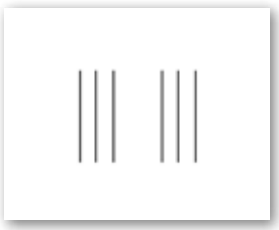


Sign No. 39.10C

Sign No. 39.11C



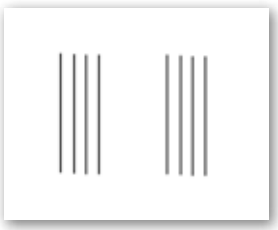
Sign No. 39.12C



Sign No. 39.13C

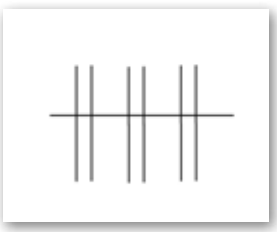
Sign No. 39.14C

Sign No. 39.15C

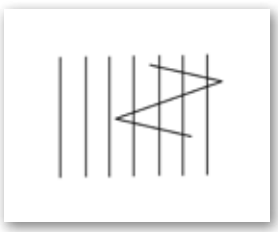


Sign No. 39.16C

Sign No. 39.17C



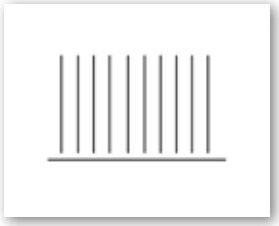
Sign No. 39.18C



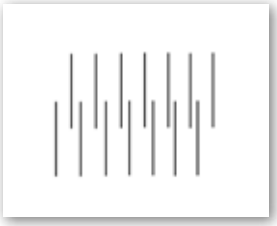
Sign No. 39.19C

Sign No. 39.20C

Sign No.39-Composites

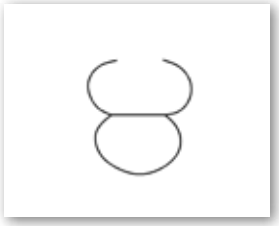


Sign No. 39.21C

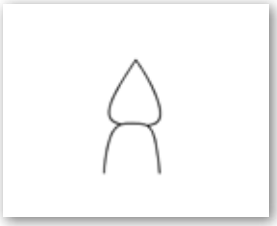


Sign No. 39.22C

Sign No.40-Base & Its Variants

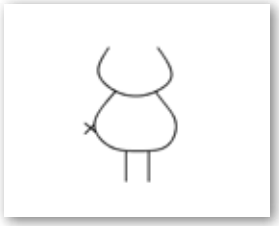


Sign No. 40.0

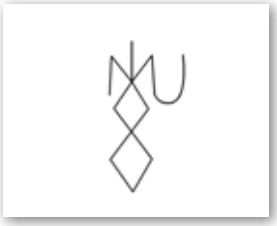


Sign No. 40.1

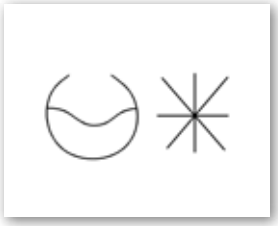
Sign No.40-Composites



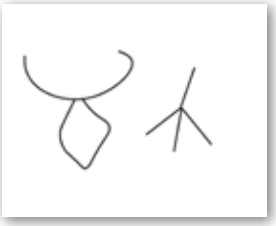
Sign No. 40.1C



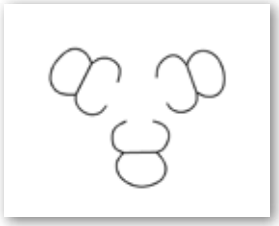
Sign No. 40.2C



Sign No. 40.3C

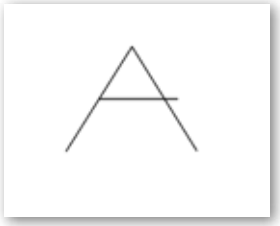


Sign No. 40.4C

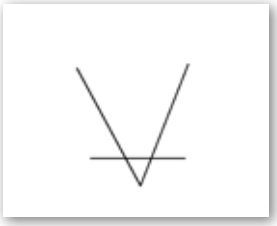


Sign No. 40.5C

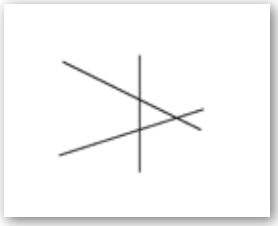
Sign No.41-Base & Its Variants



Sign No. 41.0



Sign No. 41.1



Sign No. 41.2

Sign No. 41.3

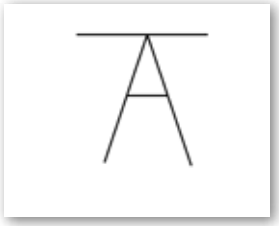
Sign No. 41.4

Sign No. 41.5

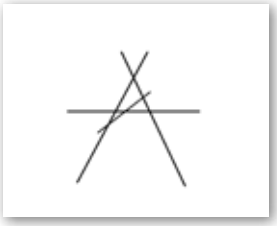
Sign No. 41.6

Sign No. 41.7

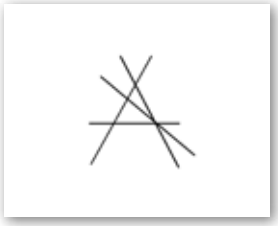
Sign No.41-Composites



Sign No. 41.1C

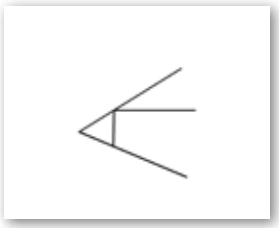


Sign No. 41.2C



Sign No. 41.3C

Sign No. 41.4C



Sign No. 41.5C

Sign No. 41.6C

Sign No. 41.7C

Sign No. 41.8C

Sign No. 41.9C

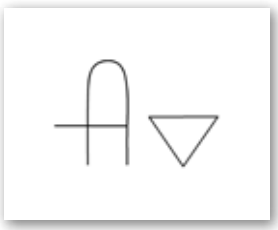
Sign No. 41.10C

Sign No. 41.11C

Sign No. 41.12C

Sign No. 41.13C

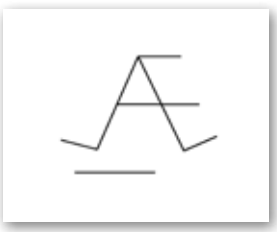
Sign No. 41.14C



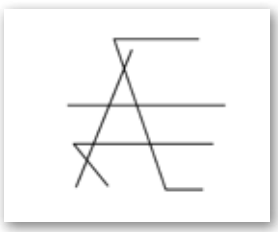
Sign No. 41.15C

Sign No. 41.16C

Sign No. 41.17C



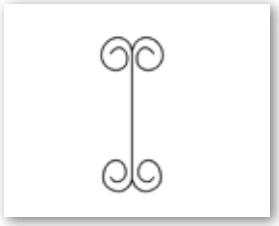
Sign No. 41.18C



Sign No. 41.19C

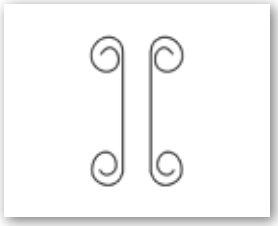
Sign No. 41.20C

Sign No.42-Base & Its Variants

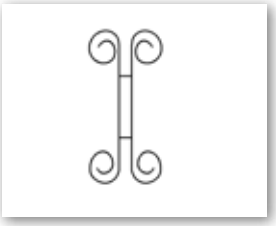


Sign No. 42.0

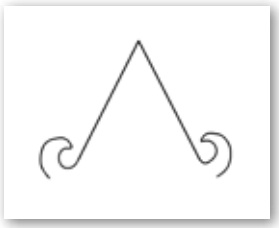
Sign No. 42.1



Sign No. 42.2



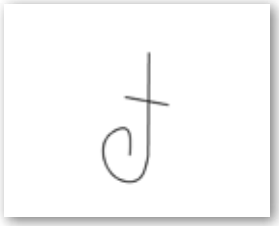
Sign No. 42.3



Sign No. 42.4

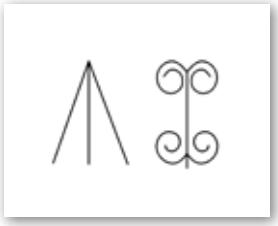
Sign No. 42.5

Sign No.42-Composites

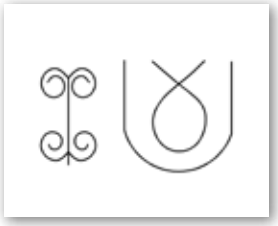


Sign No. 42.1C

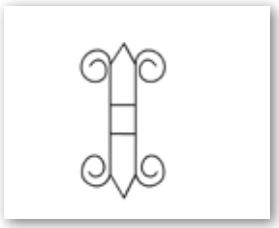
Sign No. 42.2C



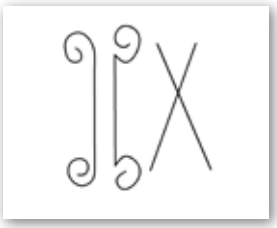
Sign No. 42.3C



Sign No. 42.4C



Sign No. 42.5C

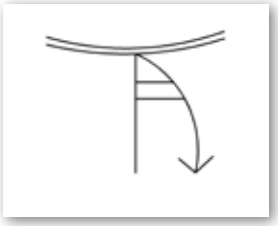


Sign No. 42.6C

Sign No. 42.7C

Sign No. 42.8C

Field Signs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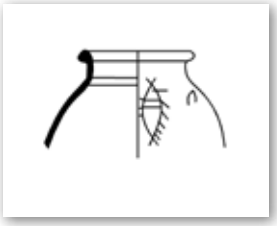
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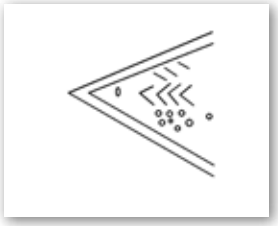
Sign no. 45.0.jpg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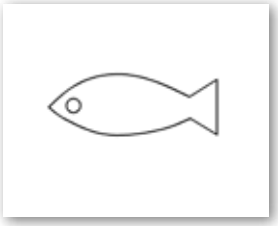
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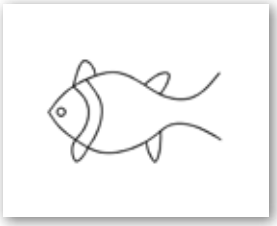
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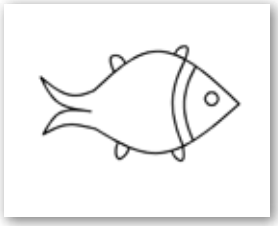
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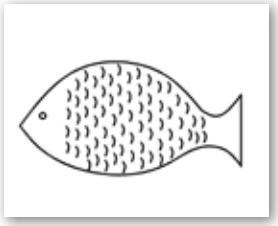
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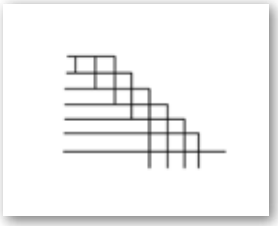
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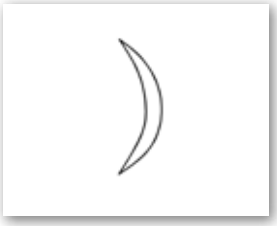
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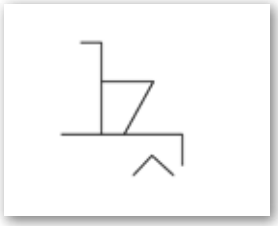
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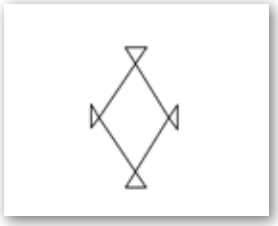
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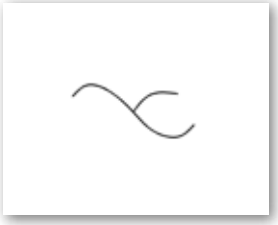
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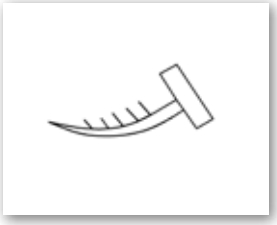
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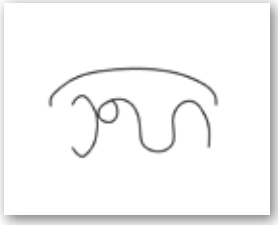
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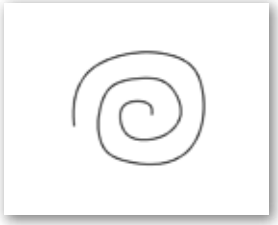
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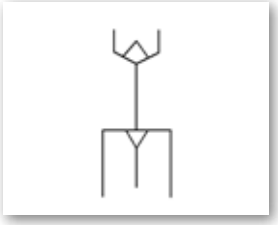
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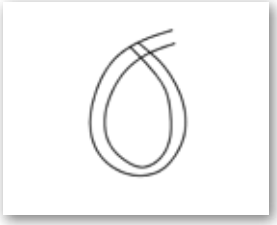
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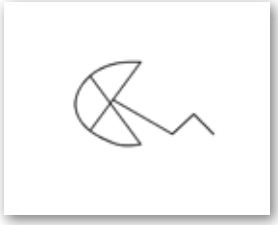
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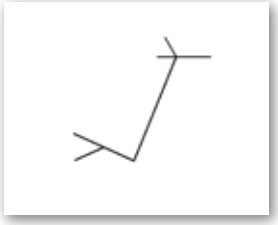
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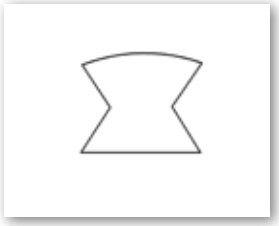
Field Signs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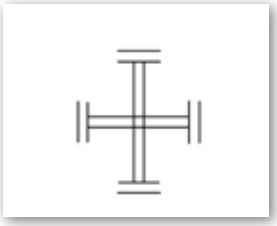
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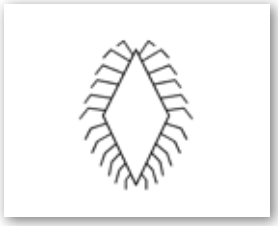
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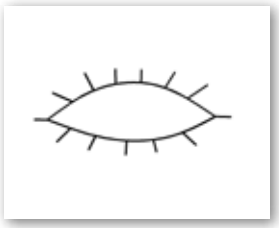
Sign no. 66.0.jpg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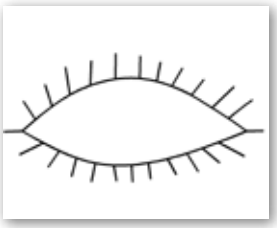
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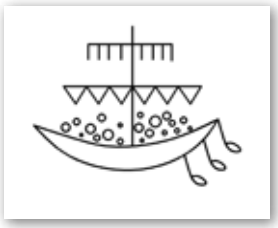
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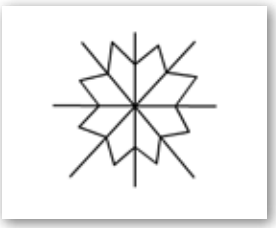
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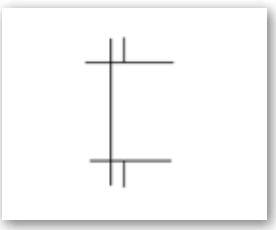
Sign no. 71.0.jpg

Sign no. 72.0.jpg

Sign no. 73.0.jpg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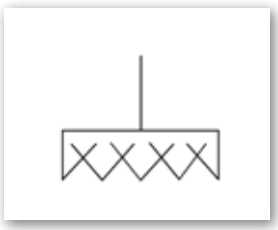
Sign no. 75.0.jpg

Sign no. 76.0.jpg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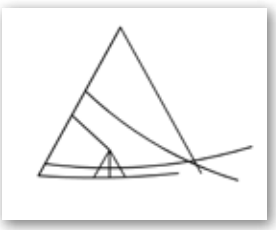
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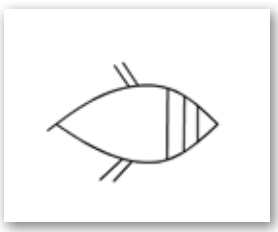
Sign no. 79.0.jpg

Sign no. 80.0.jpg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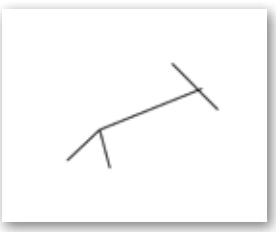
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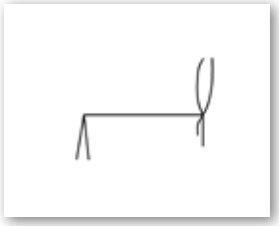
Field Signs



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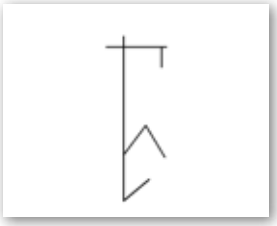
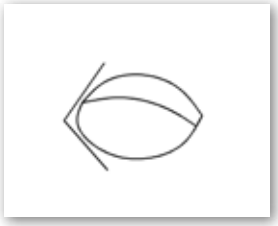


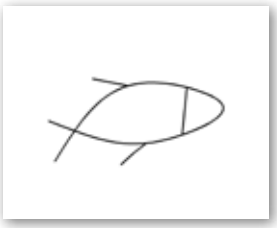
Sign no. 84.0.jpg



Sign no. 85.0.jpg

Sign no. 86.0.jpg

Sign no. 87.0.jpg



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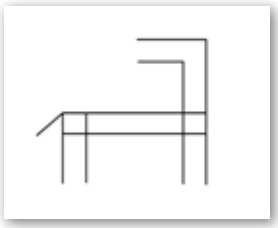

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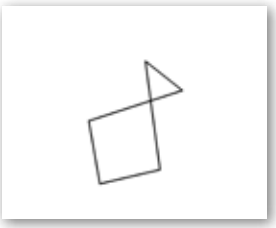

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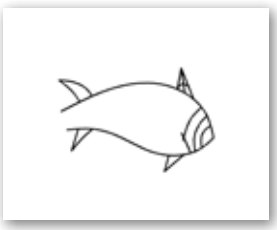

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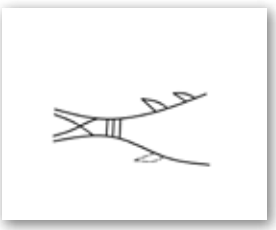

Sign no. 94.0.jpg

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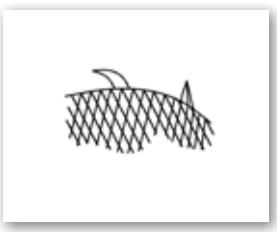

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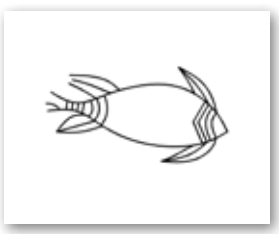

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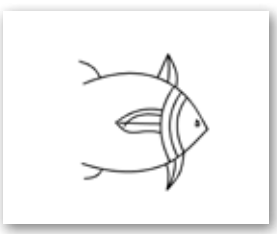


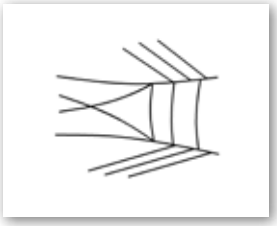
Sign no. 100.0.jpg

Sign no. 101.0.jpg

Sign no. 102.0.jpg

Field Signs

Sign no. 103.0.jpg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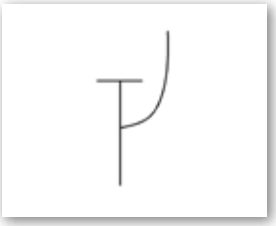
Sign no. 105.0.jpg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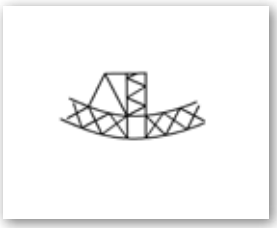
Sign no. 107.0.jpg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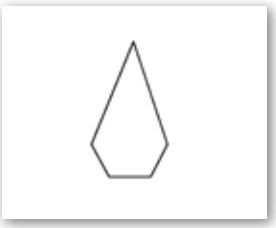
Sign no. 109.0.jpg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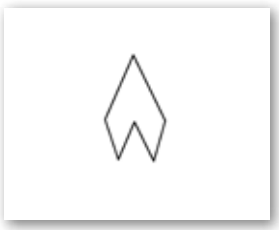
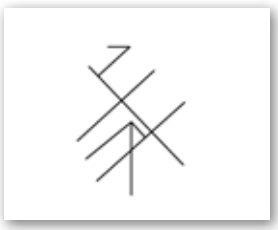

Sign no. 111.0.jpg

Sign no. 112.0.jpg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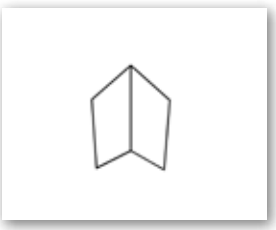
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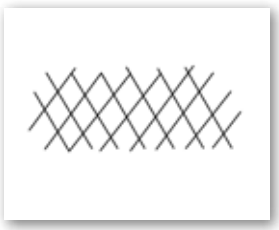
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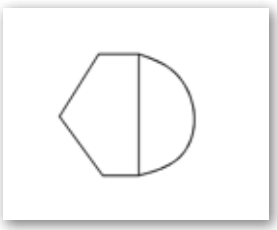
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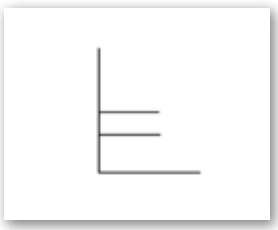
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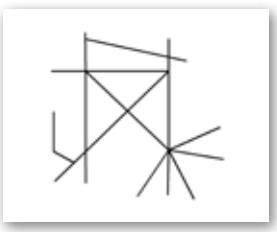
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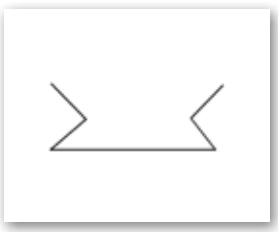
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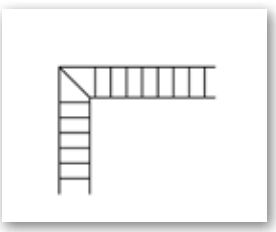
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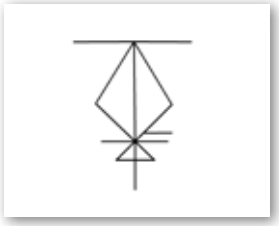
Field Signs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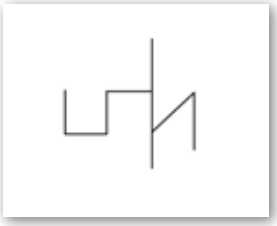
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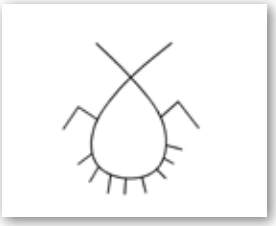
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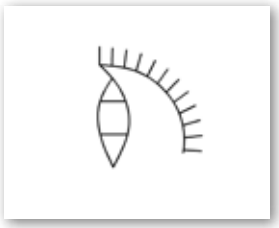
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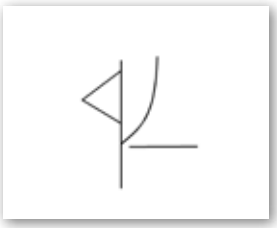
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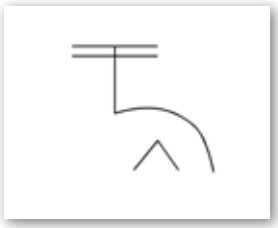
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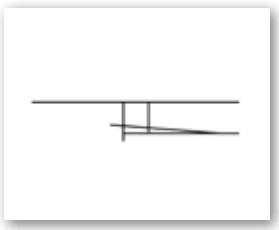
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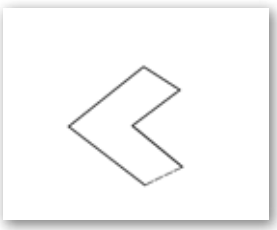
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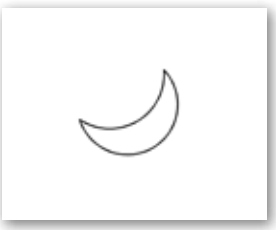
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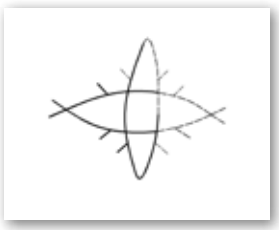
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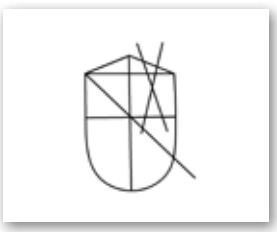
Sign no. 138.0.jpg

Sign no. 139.0.jpg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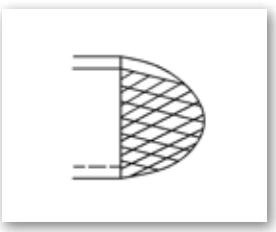
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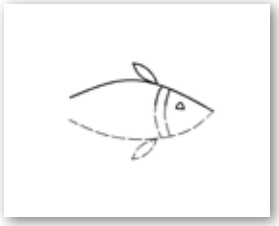
Field Signs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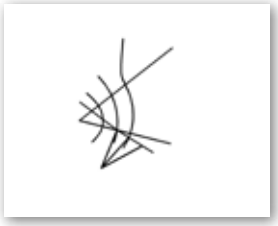
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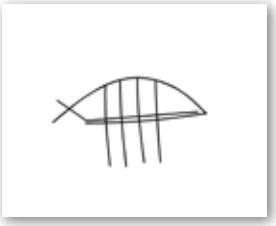
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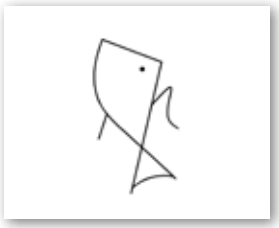
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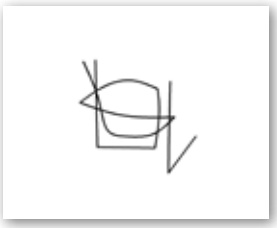
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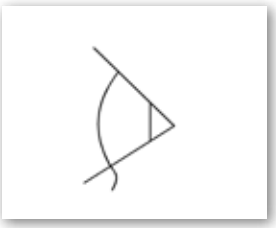
Sign no. 149.0.jpg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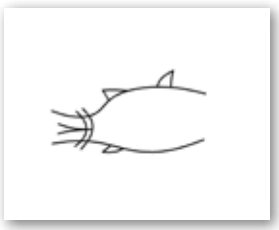
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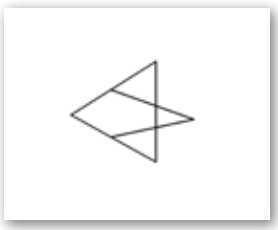
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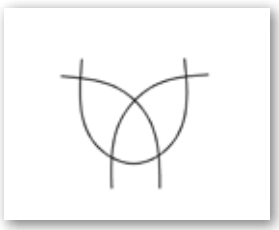
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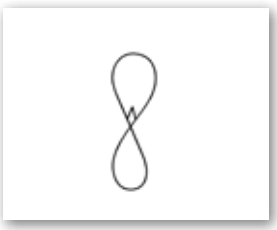
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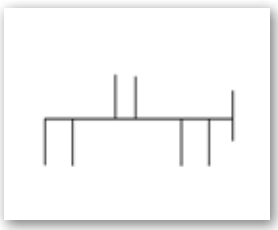
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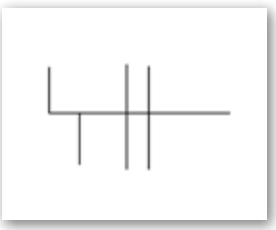
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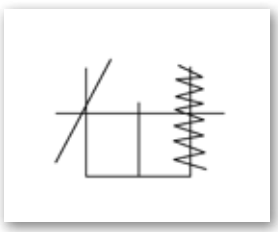
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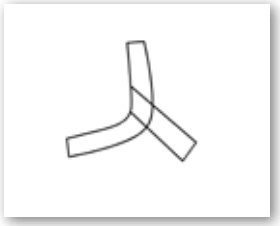
Sign no. 162.0.jpg

Field Signs



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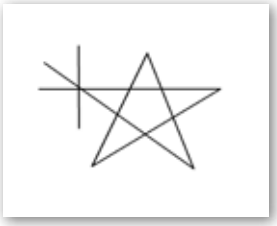

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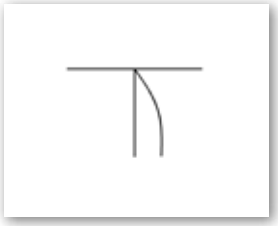
Sign no. 165.0.jpg



Sign no. 166.0.jpg

SIGN TABLE PLATES

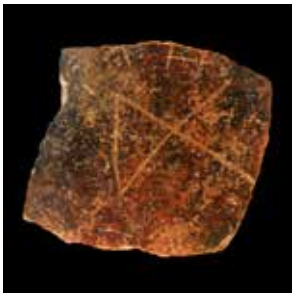
Sign No.1-Base & Variants

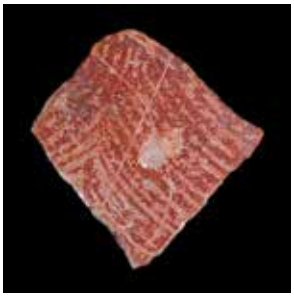
Plate 5.1

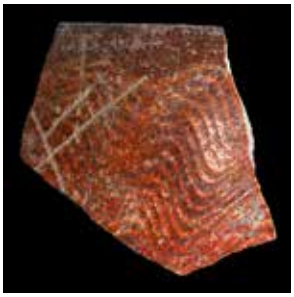
Sign_1.0_KDL_TU-PU-G-0165

Sign_1.1_KRK-G-0059

Sign_1.2_PPR-G-0102

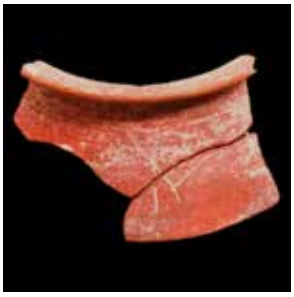

Sign_1.3_KDL_TNS-DA-G-0806


Sign_1.4_KNM-G-0201


Sign_1.5_KDL_TU-PU-G-0176

Sign_1.6_KRK-G-0025

Sign_1.7_KCM_G-0002


Sign_1.8_KLD_TNS-DA-G-0664

Sign_1.9_KLD_ASI-G-0272

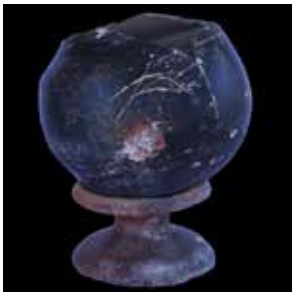
Sign_1.10_TKP-G-1067

Sign_1.11_KML_TNS-DA-G-0320

Sign_1.12_AGM-G-0146

Sign_1.13_KLD_ASI-G-0282

Sign_1.14_AGM-G-0146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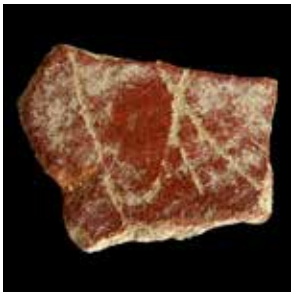
Sign_1.16_KRK-G-0060


Sign_1.17_KDL_TU-PU-G-0267

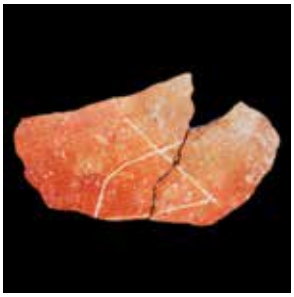
Sign_1.18_KDL_TU-PU-G-0143

Sign_1.19_AGM-G-0332

Sign No.1-Base & Variants

Plate 5.2

Sign_1.20_V-AGM-G-0448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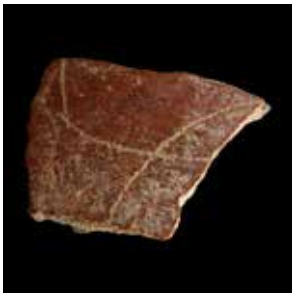
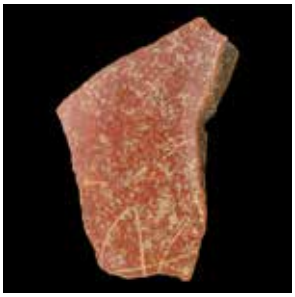

Sign_1.22_KDL_TU-PU-G-0407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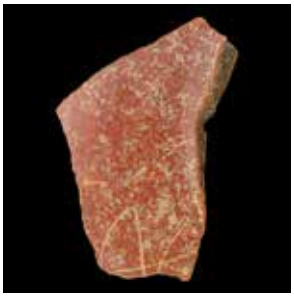
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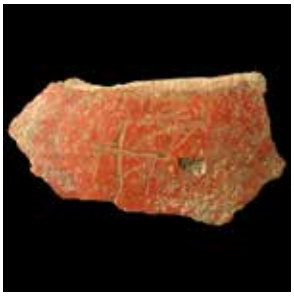
Sign_1.25_KRK-G-0056

Sign_1.26_V-AGM-G-403

Sign_1.27_TKP-G-1004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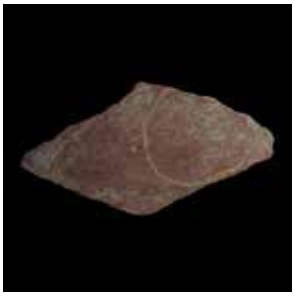
Sign_1.29_V-AGM-G-0132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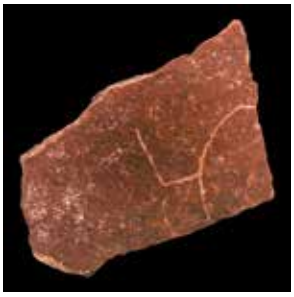
Sign_1.31_KLD_TNS-DA-G-0997

Sign_1.32_KLD_TNS-DA-G-0255

Sign_1.33_TKP_G-0646

Sign_1.34_TIV_G-0002

Sign_1.35_AGM-G-0119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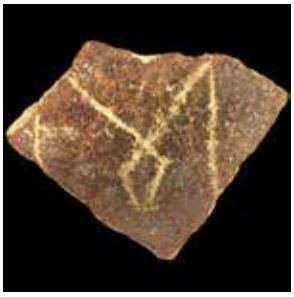

Sign_1.37_TKP_G-0900

Sign_1.38_TKP-G-2407

Sign_1.39_KML_TU-PU-G-0080

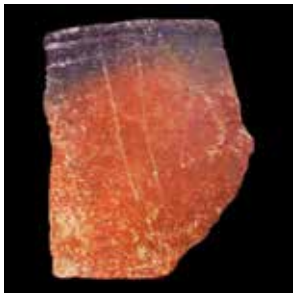
Sign No.1-Composites

Plate 5.3

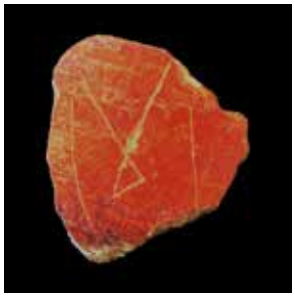
Sign_1.1_KML_1197

Sign_1.2_KLD_0238_

Sign_1.3_KLD-0417


Sign_1.4_KLD_0007

Sign_1.5_KDL_0285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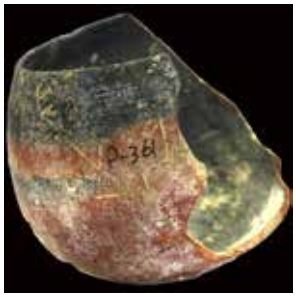
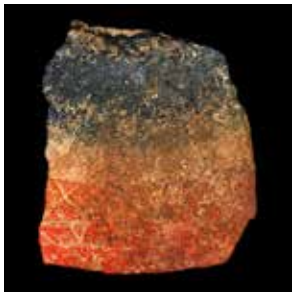
Sign_1.7_KDL_0454


Sign_1.8_KRK_0417

Sign_1.9_KRK_0422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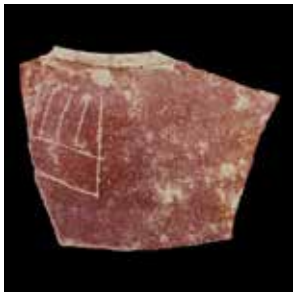
Sign_1.11_KDL_0046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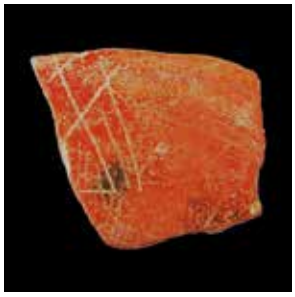
Sign_1.13_KLD_282


Sign_1.14_KDL_0045

Sign_1.15C_KRK-G-0419

Sign_1.16_KML_0780

Sign_1.17_TIV_0094

Sign_1.18_AGM_0095

Sign_1.19_KLD_0643

Sign_1.20_KDL_0041

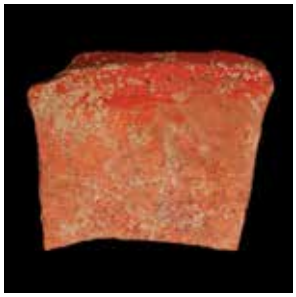
Sign No.1-Composites

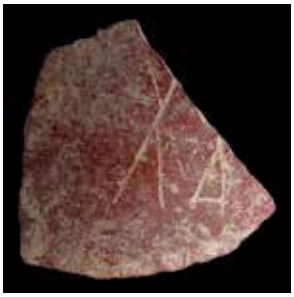
Plate 5.4

Sign_1.21C_0327

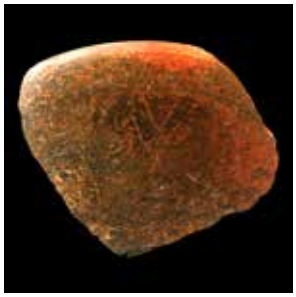
Sign_1.22C_KDL_0477

Sign_1.23_KDL_0439


Sign_1.24_KLD_0410


Sign_1.25_KDL_0150

Sign_1.26_KLD_0375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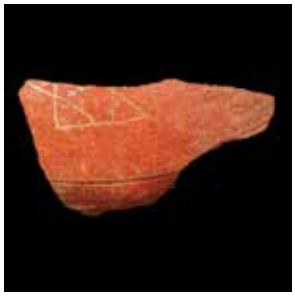
Sign_1.28C_KML_1161

Sign_1.29C_KDL_0040


Sign_1.30C_KLD_0539

Sign_1.31_KML_0803

Sign_1.32_AGM_0162

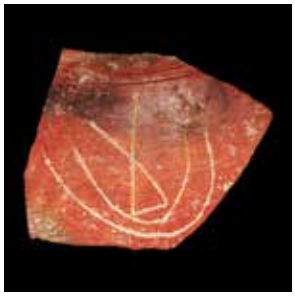
Sign_1.33_AGM_0003

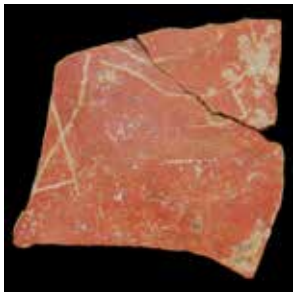
Sign_1.34_TKP_3859

Sign_1.35_KRR-G-0025

Sign_1.36_AGM-G-0047

Sign_1.37_V-AGM-G_0081


Sign_1.38_KLD_0530


Sign_1.39_KLD_0993

Sign_1.40_PPR_0011

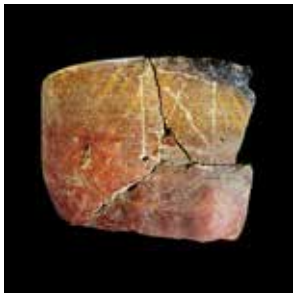
Sign No.1-Composites

Plate 5.5

Sign_1.41_V-AGM_0273

Sign_1.42_KRK_0129

Sign_1.43_KLD_0569


Sign_1.44_KDL_0526

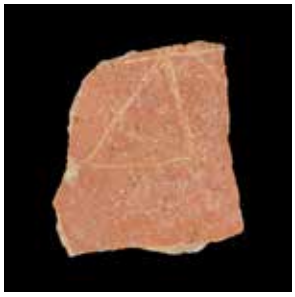
Sign_1.45_KRK_0101

Sign_1.46_SGI_0114

Sign_1.47_TKP_0821

Sign_1.48_KNM_0202

Sign_1.49_KLD_ASI_291


Sign_1.50_KLD_TNS-DA_1179

Sign_1.51_TIV_0092

Sign_1.52_KNM_0034

Sign_1.53_AGM_0189

Sign_1.54_KML_0358

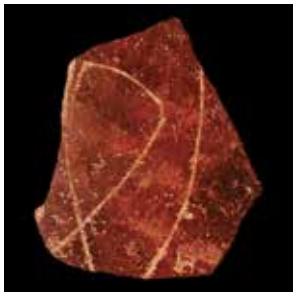
Sign_1.55_KRR_0058

Sign_1.56_SIG(VPT)_0019

Sign_1.57_KDL_0567

Sign_1.58_KRK_0123

Sign_1.59_KRK_0012


Sign_1.60_KLD_0391

Sign No.1-Composites

Plate 5.6

Sign_1.61_KRK_0143

Sign_1.62_KDL_0160

Sign_1.63_KLD_0062

Sign_1.64_KML_0728

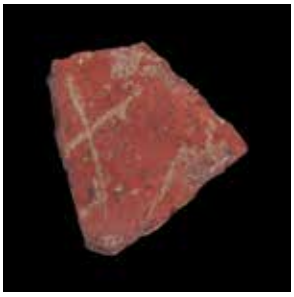
Sign_1.65_KLD_0468

Sign_1.66_TKP_2775

Sign_1.67_KLD_0631

Sign_1.68_KDL_0352

Sign_1.69_TIV_0118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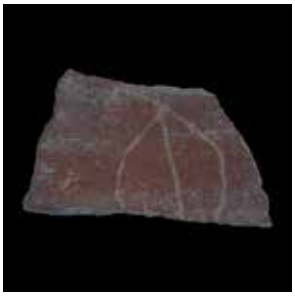
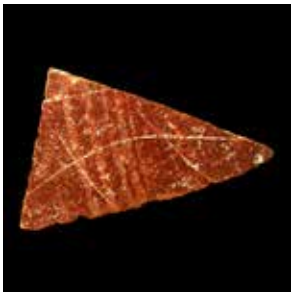

Sign_1.71_TKP_2811

Sign_1.72_TIV_0067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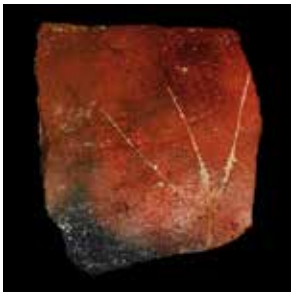
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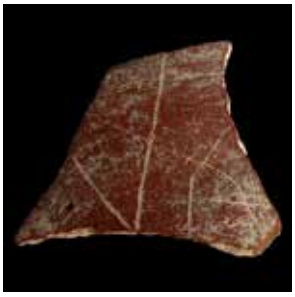
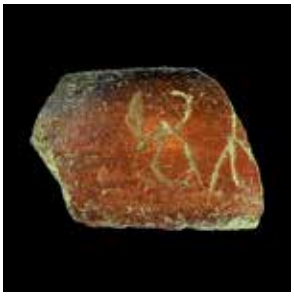
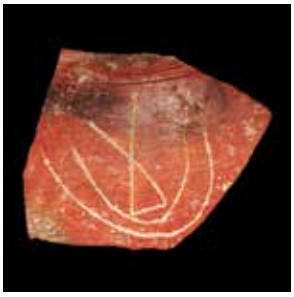

Sign_1.75_KDL_0474

Sign_1.76_KDL_0141


Sign_1.77_KDL_0025


Sign_1.78_KLD_ASI_0530

Sign_1.79_KDL_1001

Sign_1.80_0038

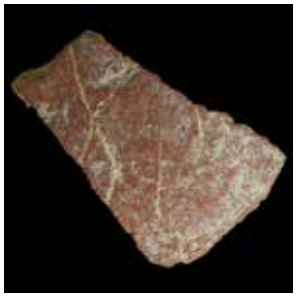
Sign No.1-Composites

Plate 5.7

Sign_1.81_KLD_0375

Sign_1.82_TIV_0039

Sign_1.83_TKP_3003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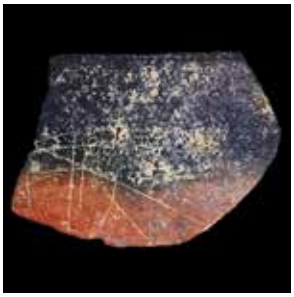
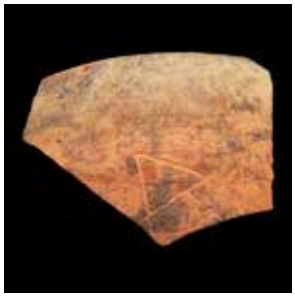

Sign_1.85_KLD_0050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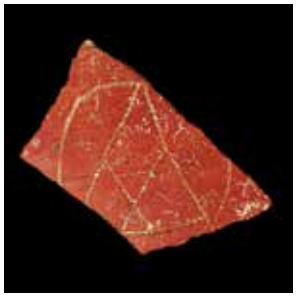
Sign_1.87_PBI_0287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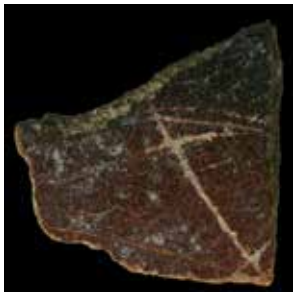
Sign_1.89_KNM_0194

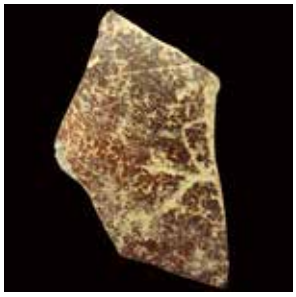
Sign_1.90_TKP_0974


Sign_1.91_TIV_0084

Sign_1.92C_KLD_0004

Sign_1.93_ADC_0302

Sign_1.94_3196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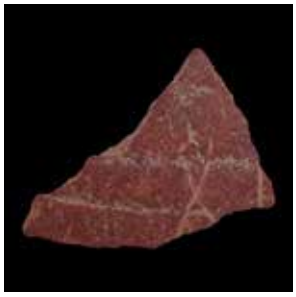

Sign_1.96_TKP_2474

Sign_1.97_TKP_3609

Sign_1.98_TKP_3252

Sign_1.99_AGM_0005

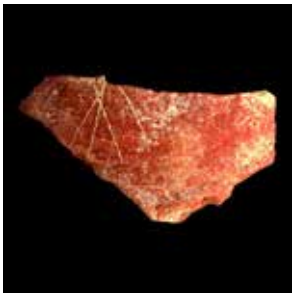
Sign_1.100_TKP_0496

Sign No.1-Composites

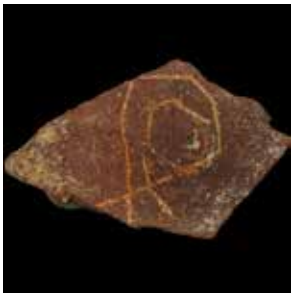
Plate 5.8

Sign_1.101_KLD_0162

Sign_1.102_KLD_0256


Sign_1.103_KDL_0482

Sign_1.104_PMR_0030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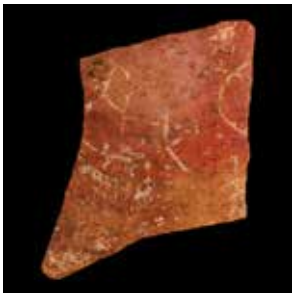
Sign_1.106_0003

Sign_1.107_KRR_0200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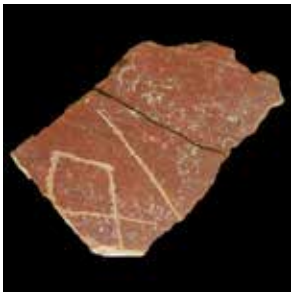
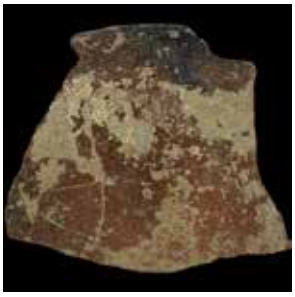

Sign_1.109_TIV_0080

Sign_1.110_TIV_0058

Sign_1.111_TKP_2729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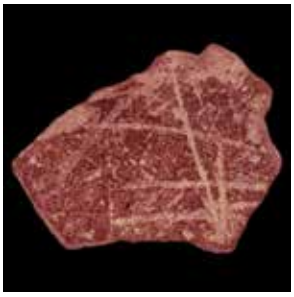
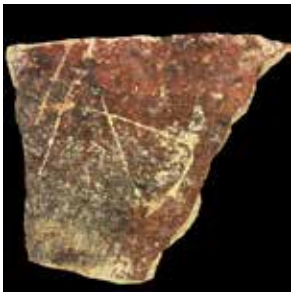
Sign_1.113_KRK_0062


Sign_1.114_KRK_0001

Sign_1.115_PBI_0145

Sign_1.116_KDL_0190

Sign_1.117_TKP_0460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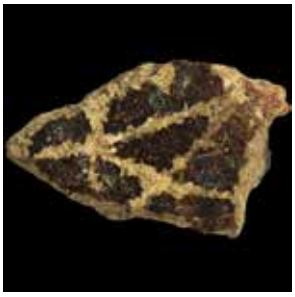
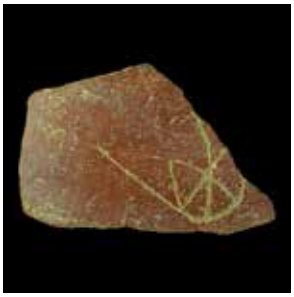
Sign_1.119_TIV_0094


Sign_1.120_TKP_0790

Sign No.1-Composites

Plate 5.9



Sign_1.121_KDL_0051

Sign_1.122_KLD-TNS-DA_0297

Sign_1.123_PSG_0001

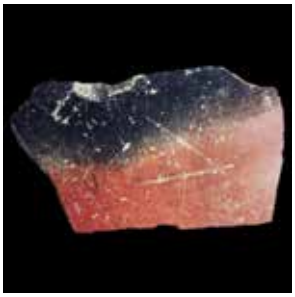
Sign_1.124_Vidoor_0001

Sign No.2-Base & Variants

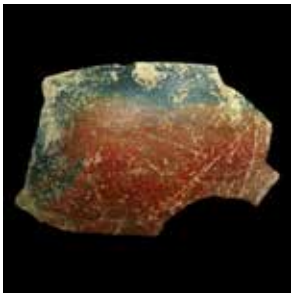
Plate 5.10

Sign_2.0_KLD_ASI-G-0193

Sign_2.1_KML_TNS-DA-G-0270


Sign_2.2_TKP-G-0002

Sign_2.3_TKP-G-1231


Sign_2.4_MGD-G-0020

Sign_2.5_ADC_G_0001

Sign_2.6_TKP-G-0355

Sign_2.7_TKP-G-4405

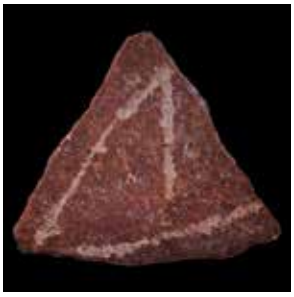
Sign_2.8_KML-G-0619

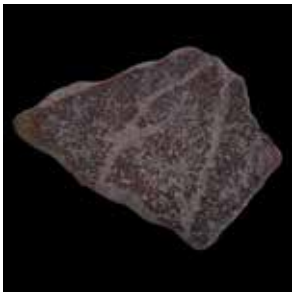
Sign_2.9_TKP-G-0597

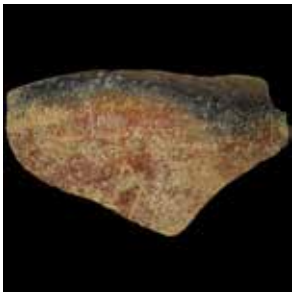
Sign_2.10_KML-G-0016

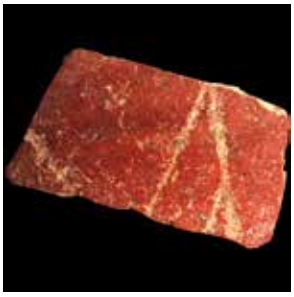
Sign_2.11_ADC-G_0032

Sign_2.12_TKP-G-3115


Sign_2.13_TKP-G-4611

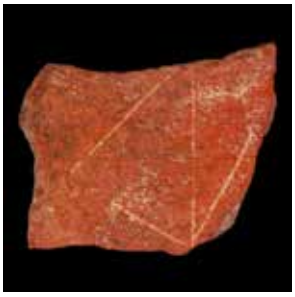

Sign_2.14_TKP-G-2345


Sign_2.15_TKP-G-0709


Sign_2.16_TKP-G-0384

Sign_2.17_TKP-G-3782

Sign_2.18_V.AGM-G-0146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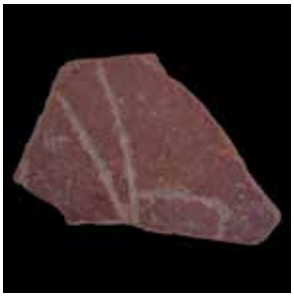
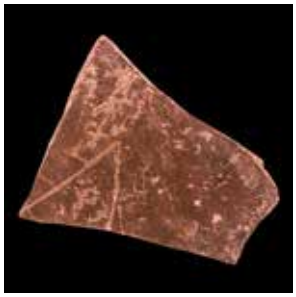
Sign No.2-Base & Variants

Plate 5.11


Sign_2.20_TKP-G-2813

Sign_2.21_PMR-G-0031

Sign_2.22_TKP_G-0712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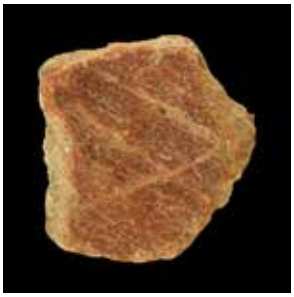
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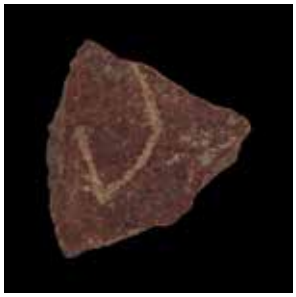
Sign_2.25_PMR-G-0026


Sign_2.26_TKP-G-2291

Sign_2.27_KML-G-1037

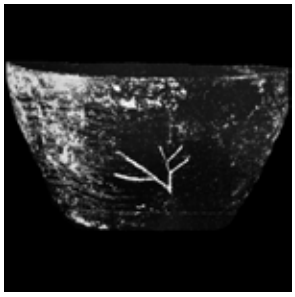
Sign_2.28_TIV_G-0042

Sign_2.29_TKP-G-0997

Sign_2.30_TKP-G-4004

Sign_2.31_KDL-TU-PU-G-0236

Sign_2.32_TIV_G-0205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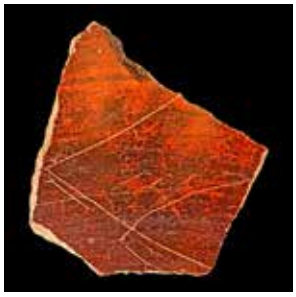
Sign_2.34_AGM-G-0113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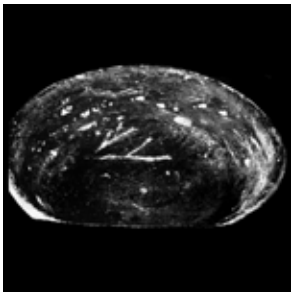

Sign_2.36_Vellalur_2

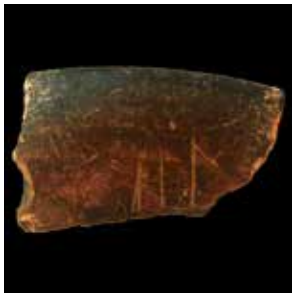
Sign_2.37_KML-G-0533

Sign_2.38_KML-G-0416

Sign No.2-Composites

Plate 5.12

Sign_2.1_V-AGM_0186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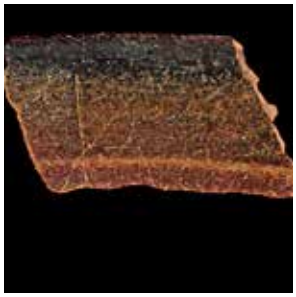
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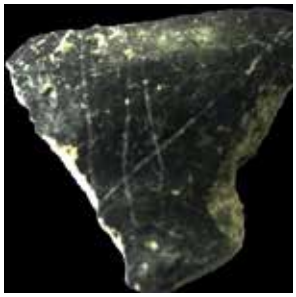
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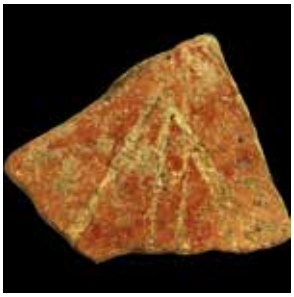
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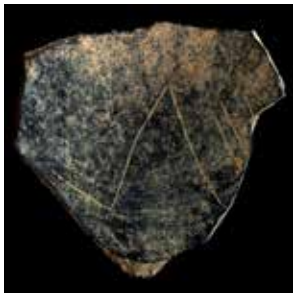
Sign_2.6_MGD_0123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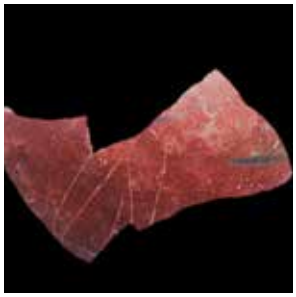
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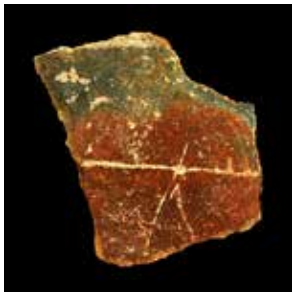
Sign_2.9_AGM_0228_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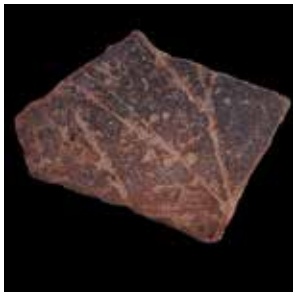
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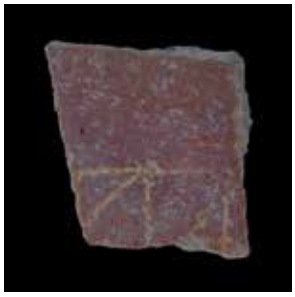
Sign_2.11_TKP_3580

Sign_2.12_TKP_3025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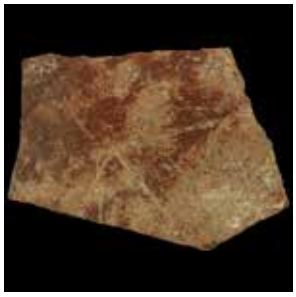
Sign_2.14_KML_0529

Sign_2.15_PMR_0033

Sign_2.16_SMM_0007

Sign_2.17_NDR_0031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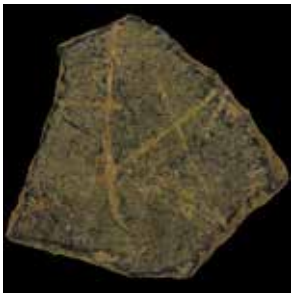
Sign_2.19_TKP_4227

Sign No.2-Composites

Plate 5.13

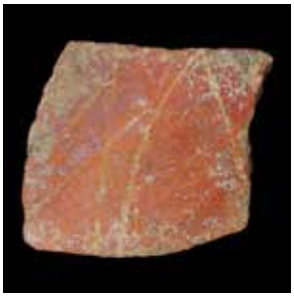

Sign_2.20_TKP_0735

Sign_2.21_KML_1113

SigN_2.22_AGM_0153

Sign_2.23_ADC_0496

Sign_2.24_ADC_0072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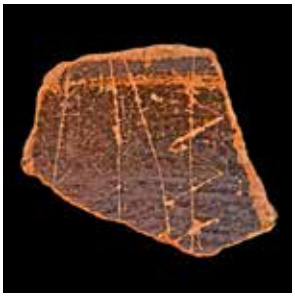
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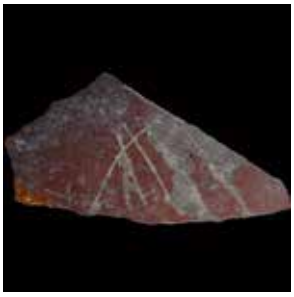
Sign_2.27_KLD-ASI_0027

Sign_2.28_ADC_0219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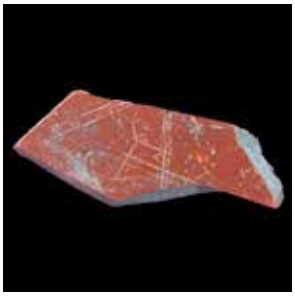
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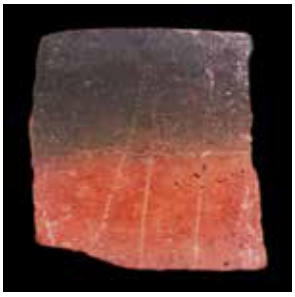
Sign_2.32_TKP_2679

Sign_2.33_TKP_4748

Sign_2.34_AGM_0113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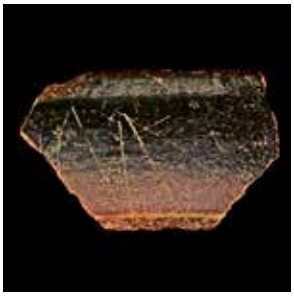
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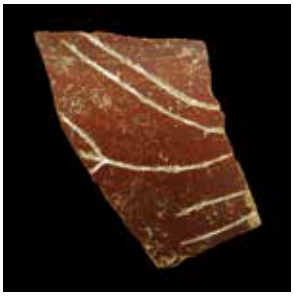
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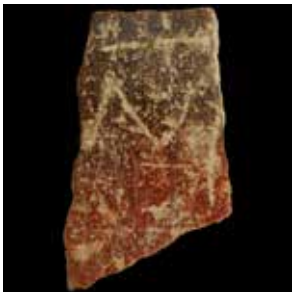
Sign_2.38_KLD-ASI_0331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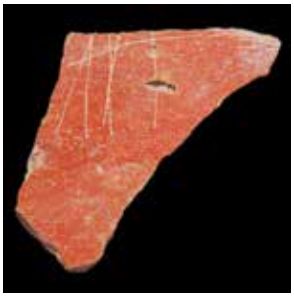
Sign No.2-Composites

Plate 5.14

Sign_2.40_KML_0867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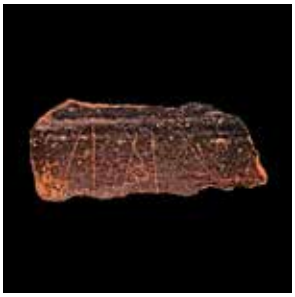
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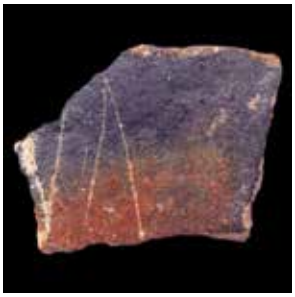
Sign_2.45_KML_1113

Sign_2.46_KLD-TNS-DA_0668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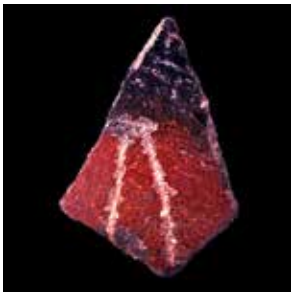
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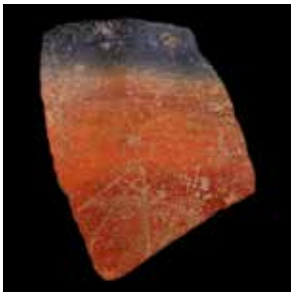
Sign_2.49_0348

Sign_2.50_KML_0186

Sign_2.51_TKP_4182

Sign_2.52_TKP_4505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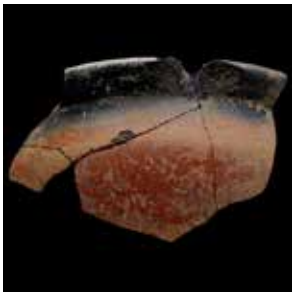
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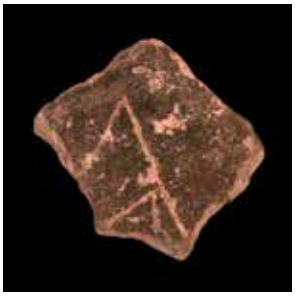
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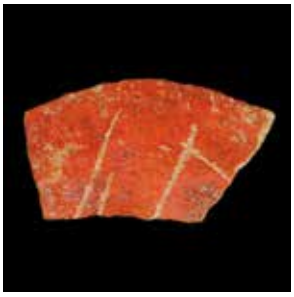
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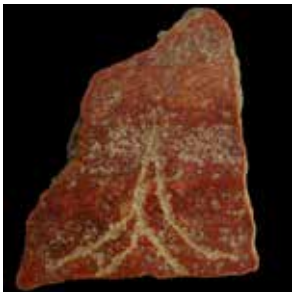
Sign_2.57_SVG_0004


Sign_2.58_TKP_3272

Sign_2.59_KML_0430

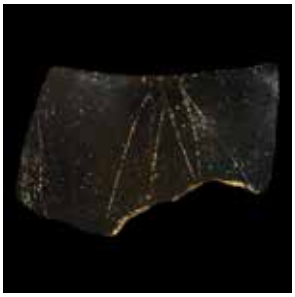
Sign No.2-Composites

Plate 5.15

Sign_2.60_PBI_0091

Sign_2.61_SGI(VPT)_0068

Sign_2.62_TKP_3269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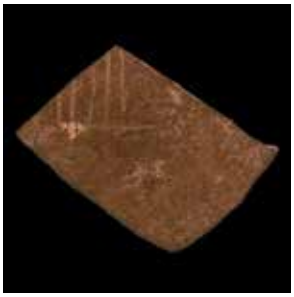
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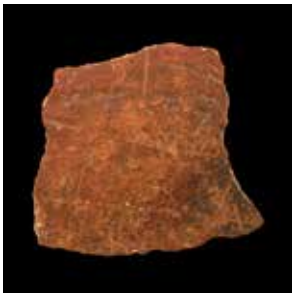
Sign_2.65_KMD_0080


Sign_2.66_KML_0212

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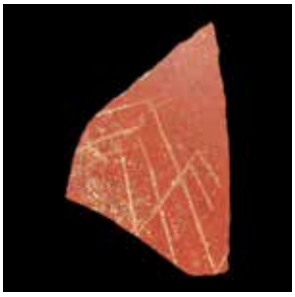
Sign_2.68_KLD-TNS-DA_0033

Sign_2.69_ADC_0174

Sign_2.70_KMD_0045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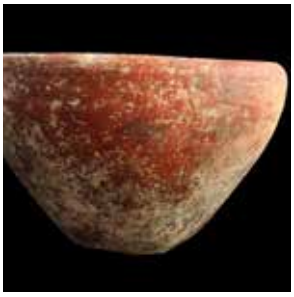
Sign_2.72_MGD_0134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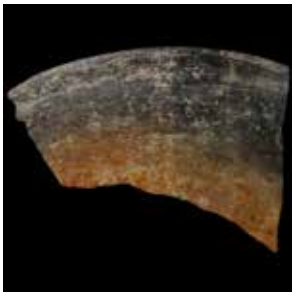
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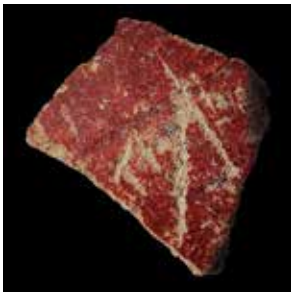
Sign_2.75_KRR_0124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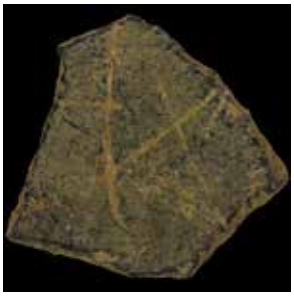
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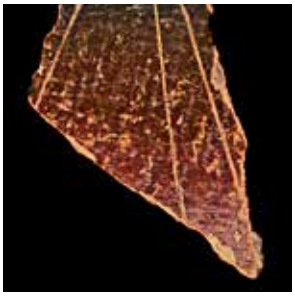
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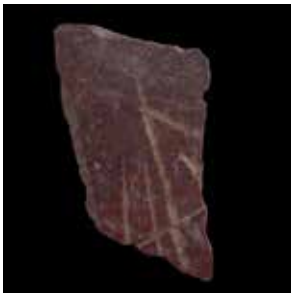
Sign_2.79_TKP_3800

Sign No.2-Composites

Plate 5.16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Sign_2.81_KMD_0029

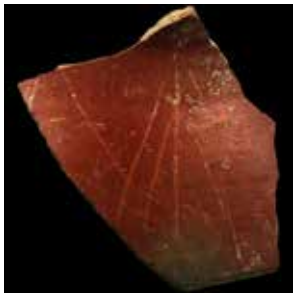
Sign_2.82_KML_1133

Sign_2.83_TKP_3721

Sign_2.84_KML_0780

Sign_2.85_KLD-ASI_0171

Sign_2.86_KMD_0060

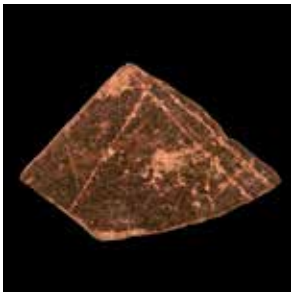

Sign_2.87_PRR_0075

Sign_2.88_KCM_0014

Sign_2.89_KLD_TNS-DA_0478

Sign_2.90_KLD-TNS-DA_0397

Sign_2.91_PRR_0014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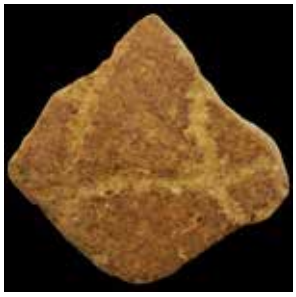
Sign_2.93_AGM_0006

Sign_2.94_PBI_0568_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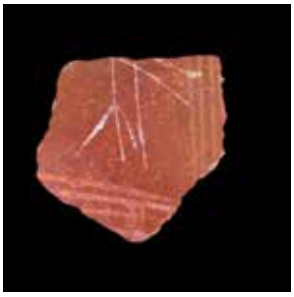

Sign_2.96_KNM_0245

Sign_2.97_PBI_0501

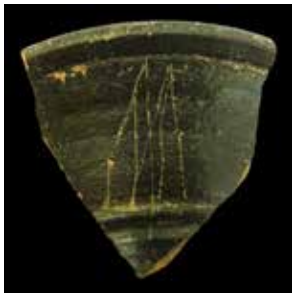
Sign_2.98_KNM_0172

Sign_2.99_KLD-TNS-DA_0010

Sign No.2-Composites

Plate 5.17

Sign_2.100_KRK_0109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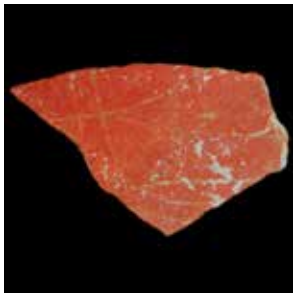
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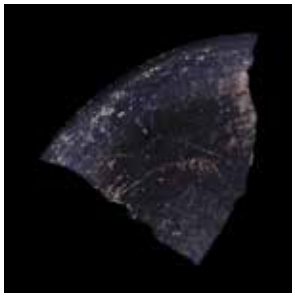
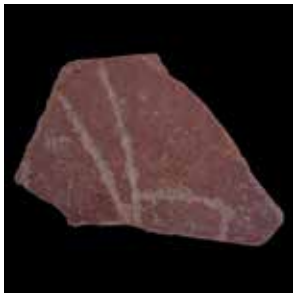
Sign_2.104_KML_1271

Sign_2.105_MGD_0114


Sign_2.106_KNM_0203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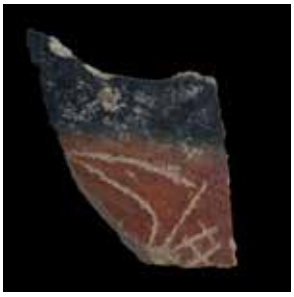
Sign_2.108_TKP_2997


Sign_2.109_TKP_2945

Sign_2.110_KDL-TU-PU_0465

Sign_2.111_AGM_0075

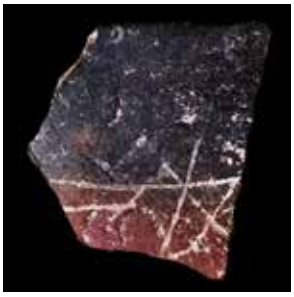
Sign_2.112_KRR_0045

Sign_2.113_MGM_0037

Sign_2.114_KML_1346

Sign_2.115_TKP_2422

Sign_2.116_AGM_0113


Sign_2.117_KLD-ASI_0085

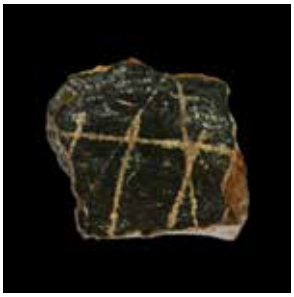
Sign_2.118_ADC_0532

Sign_2.119_ADC_0528

Sign_2.120_ADC_0114

Sign No.2-Composites

Plate 5.18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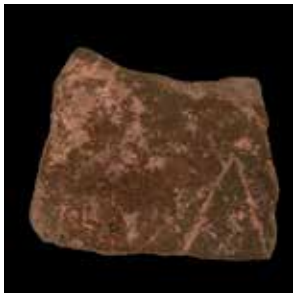
Sign_2.122_ADC_0032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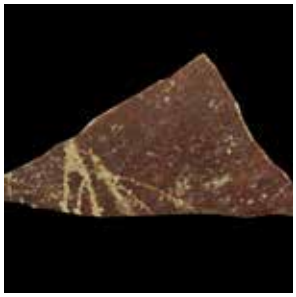
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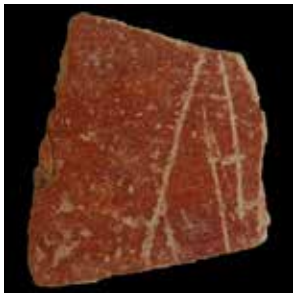
Sign_2.125_TKP_1068

Sign_2.126_TKP_3018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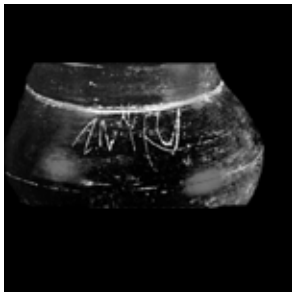
Sign_2.128_KRR_0081

Sign_2.129_KML_0533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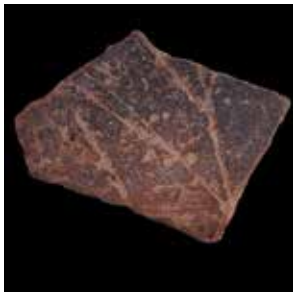
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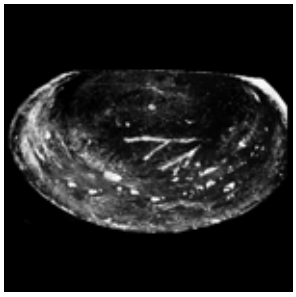
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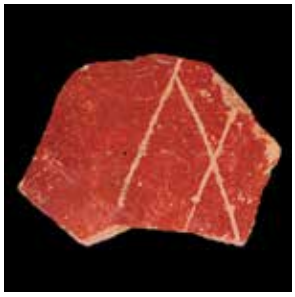
Sign_2.133_AGM_0166

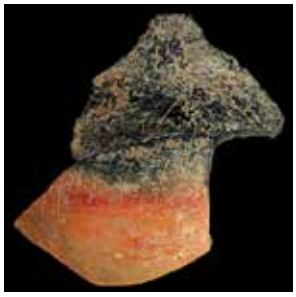

Sign_2.134_KLD-ASI_0303

Sign_2.135_KRK_0185

Sign_2.136_TKP_1015

Sign_2.137_TKP_2567

Sign_2.138_TKP_0013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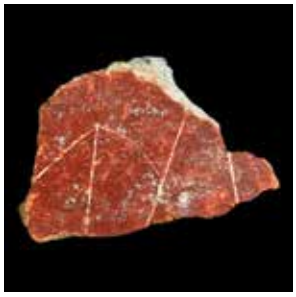
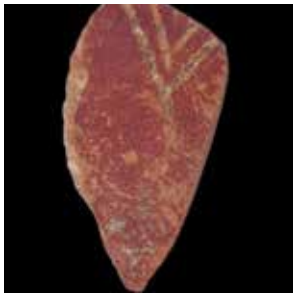

Sign_2.140_KLD-ASI_0310

Sign No.2-Composites

Plate 5.19

Sign_2.141_TKP_0358

Sign_2.142_KRR_0016


Sign_2.143_ADC_0044

Sign_2.144_TKP_0745

Sign_2.145_TKP_2698

Sign_2.146_TKP_0547

Sign_2.147_KLD-TNS-DA_1294

Sign_2.148_TKP_4157

Sign_2.149_TKP_2533

Sign_2.150_KML_0603

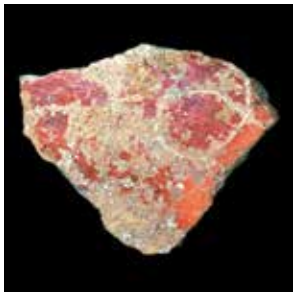
Sign_2.151_ADC_0496

Sign_2.152_PRR_0027

Sign_2.153_KDL-TU-PU-0367

Sign_2.154_TKP_2470

Sign_2.155_MGD_0130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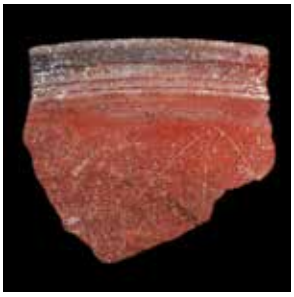

Sign_2.157_KLD-ASI_0031

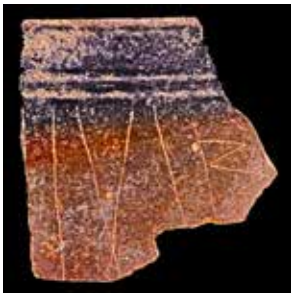
Sign_2.158_TKP_1041

Sign_2.159_TKP_3227

Sign_2.160_KRK_0155

Sign No.2-Composites

Plate 5.20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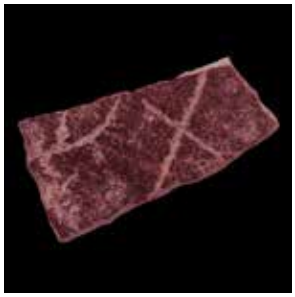
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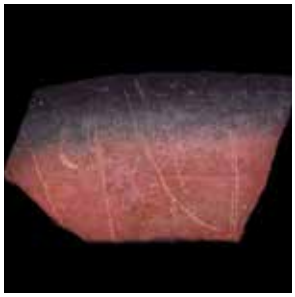
Sign_2.163_TKP_2783

Sign_2.164_ADC_0186

Sign_2.165_TKP_3248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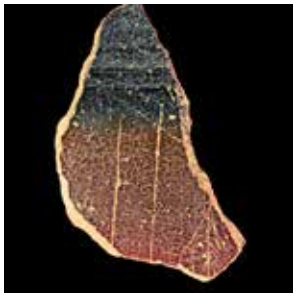
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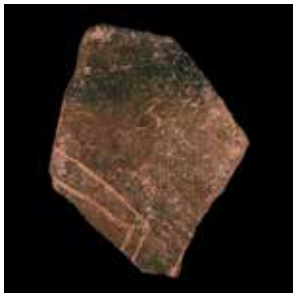
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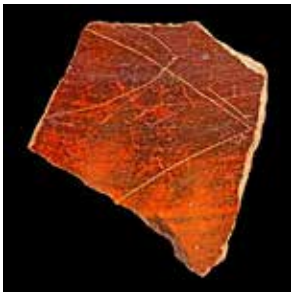
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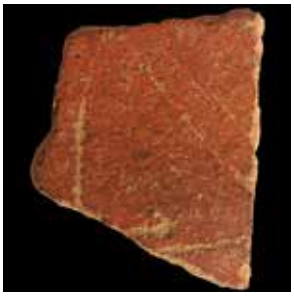
Sign_2.170_KRK_0120

Sign_2.171_TKP_4144

Sign_2.172_PRR_0310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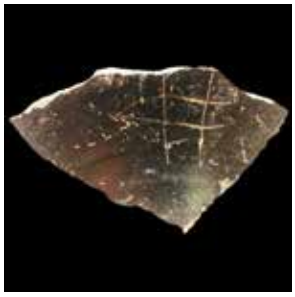
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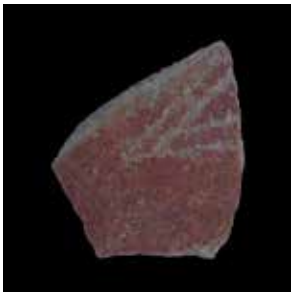
Sign_2.175_TKP_0676

Sign_2.176_TKP_1050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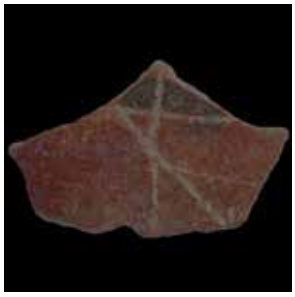

Sign_2.178_TKP_3625

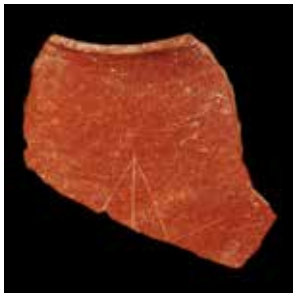
Sign_2.179_TKP_3114

Sign No.3-Base & Variants

Plate 5.21

Sign_3.0_KMD-G-0090

Sign_3.1_TKP-G-0627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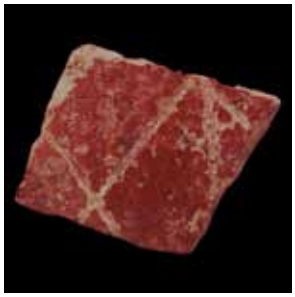
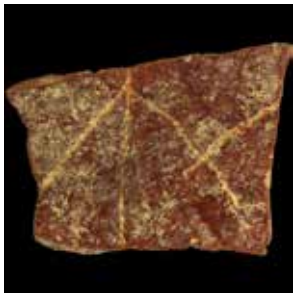
SIgn_3.3_TKP_G-2364

SIgn_3.4_TKP_G-2914


Sign_3.5_KRK-G-0045


Sign_3.6_TKP-G-0490

Sign_3.7_TKP-G-0256

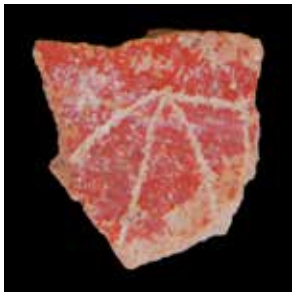
Sign_3.8_KLD_TNS-DA-G-0294

Sign_3.9_KLD_TNS-DA-G-0797

Sign_3.10_KLD_TNS-DA-G-0999

Sign_3.11_KLD_ASI-G-0176

Sign_3.12_AGM-G-0337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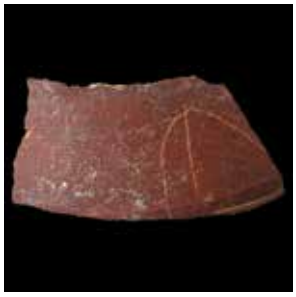
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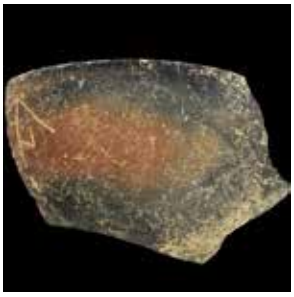
Sign_3.15_KDL_TU-PU-G-0219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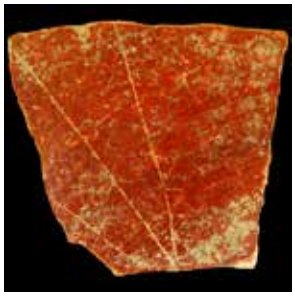

Sign_3.17_NDR_G-0029

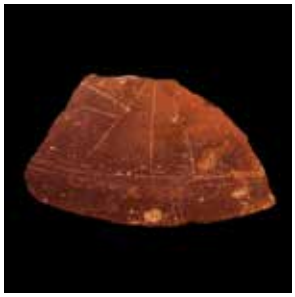
Sign_3.18_TKP-G-0921

Sign_3.19_TKP_G-4092

Sign No.3-Base & Variants

Plate 5.22

Sign_3.20_KDL_TU-PU-G-0411



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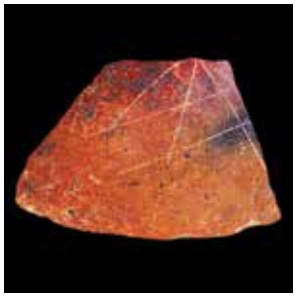

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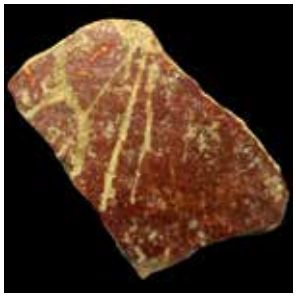
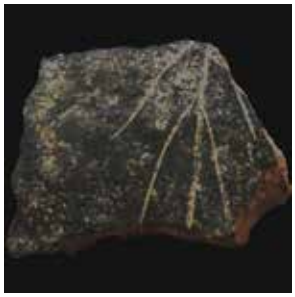


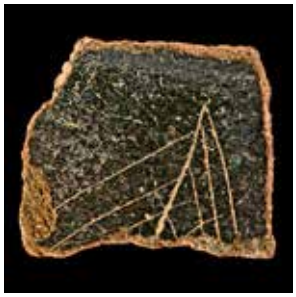
Sign_3.23_TKP_G-0338

Sign_3.24_KML_TNS-DA-G-0387



Sign_3.25_PRR-G-0398

Sign_3.26_KLD_TNS-DA-G-0769



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Sign No.3-Composites

Plate 5.23

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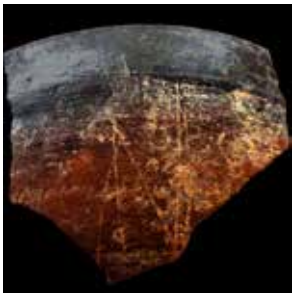
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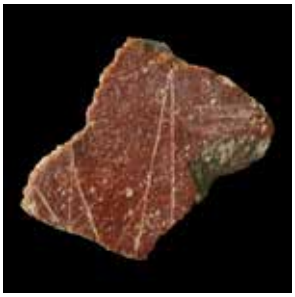
Sign_3.5_KRR_0157

Sign_3.6_TKP_2684

Sign_3.7_TI_0156_TIV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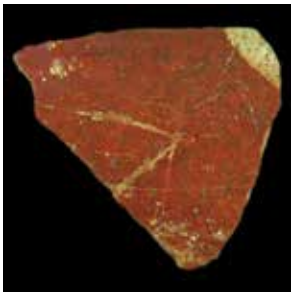
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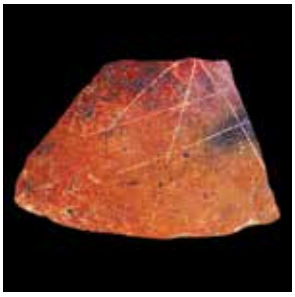
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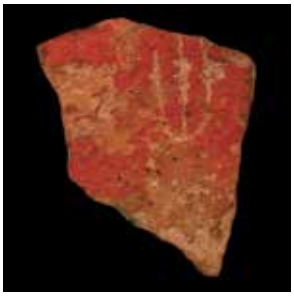
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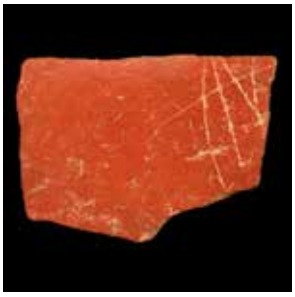
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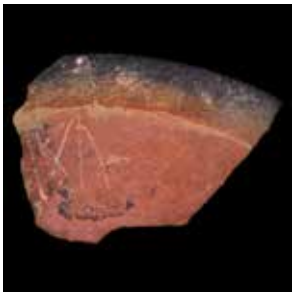
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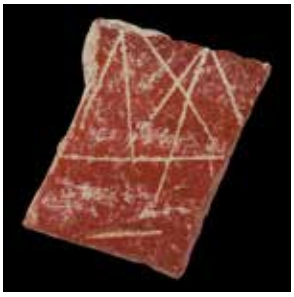
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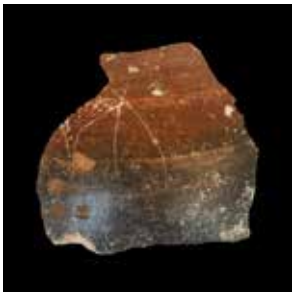
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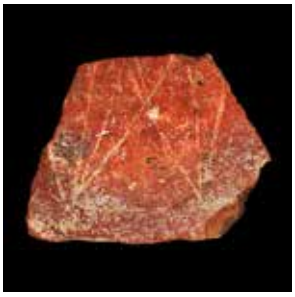
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Sign No.3-Composites

Plate 5.24

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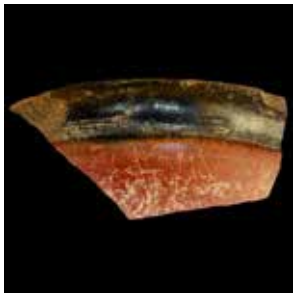
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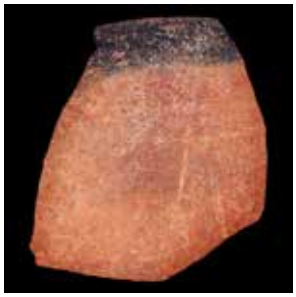
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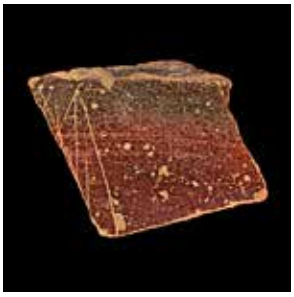
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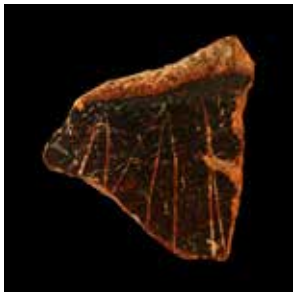
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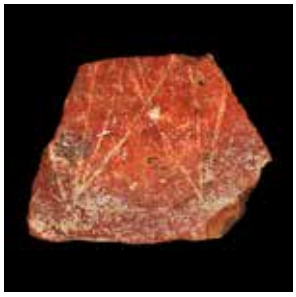
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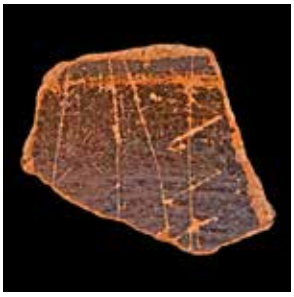
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Sign_3.35_KLD_0349

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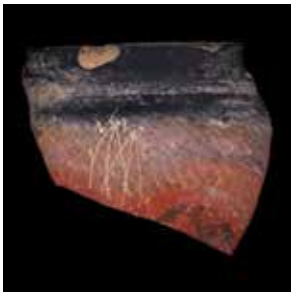
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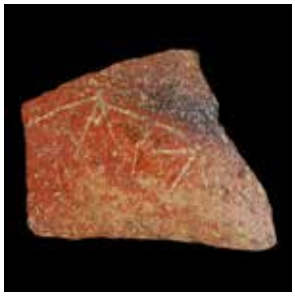
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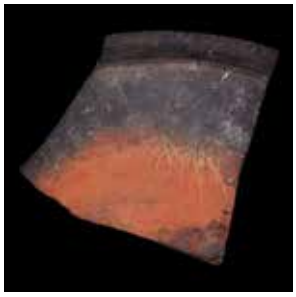
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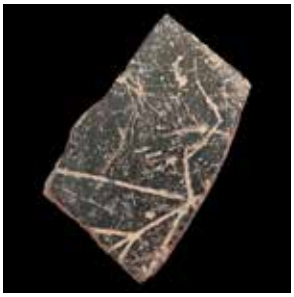
Plate 5.25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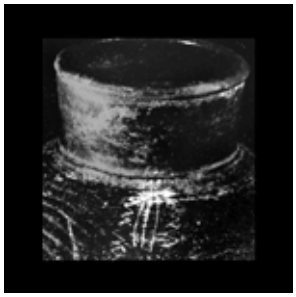
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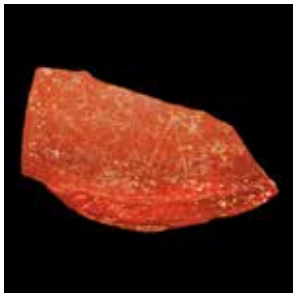
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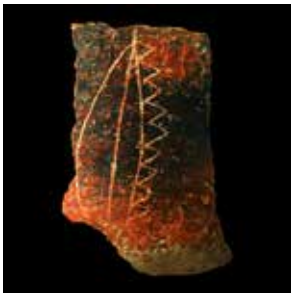
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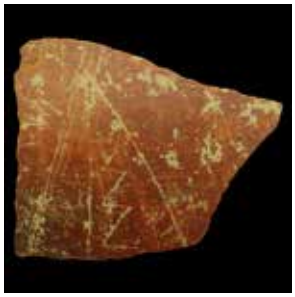
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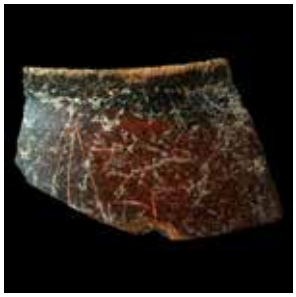
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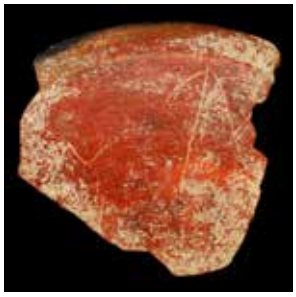
Sign_3.50_PBI_0378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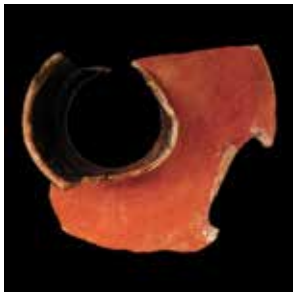
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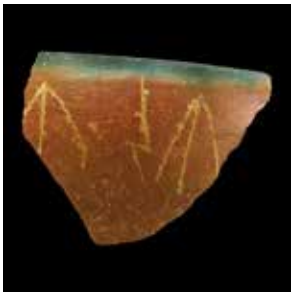
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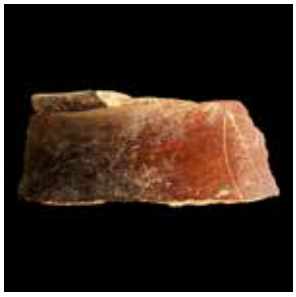
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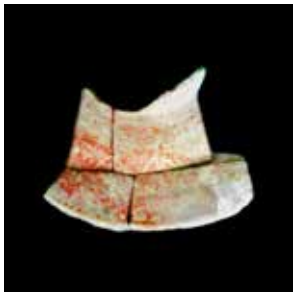
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Plate 5.26

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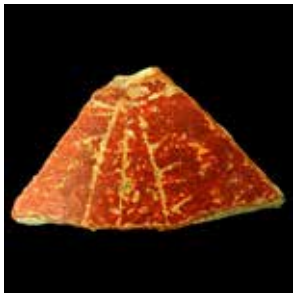
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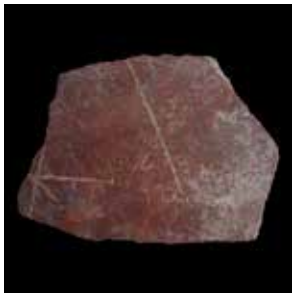
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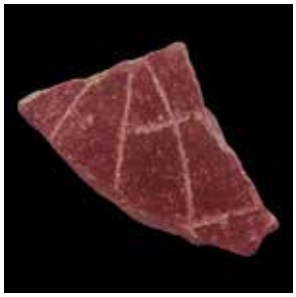
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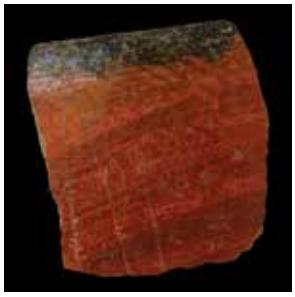
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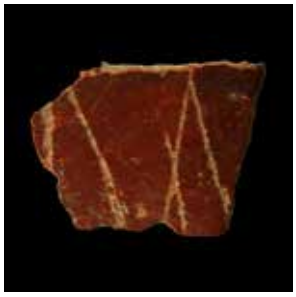
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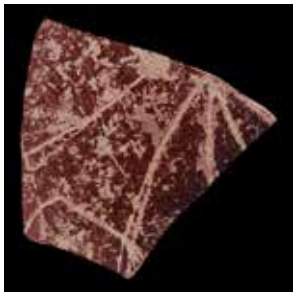
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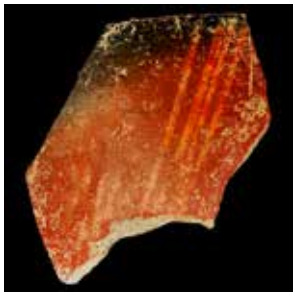
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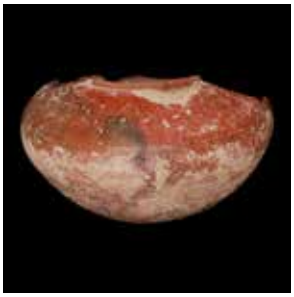
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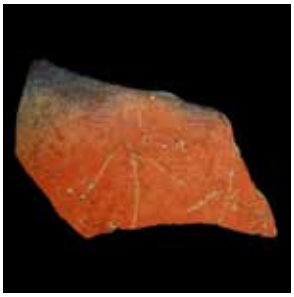
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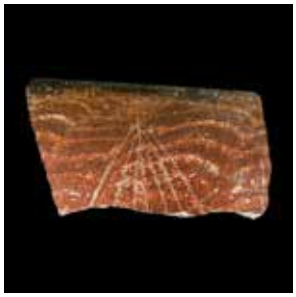
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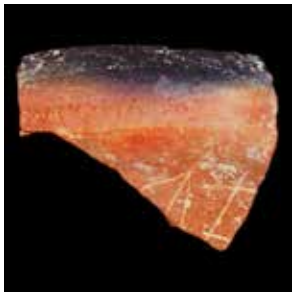
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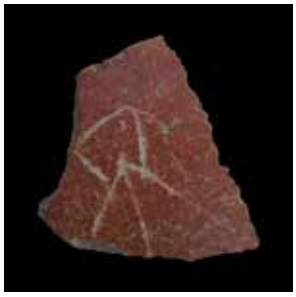
Sign_3.95_PBI_0382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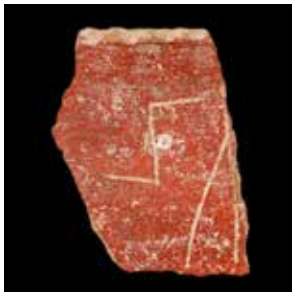
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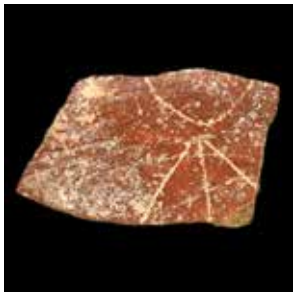
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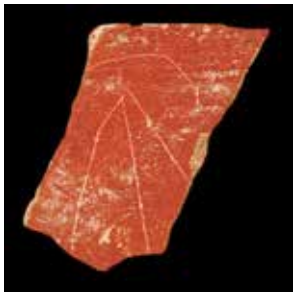
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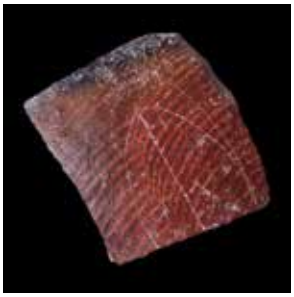
Sign No.3-Composites

Plate 5.28



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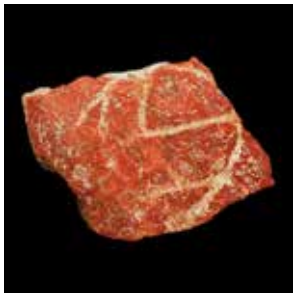
Sign_3.102_KLD_0488



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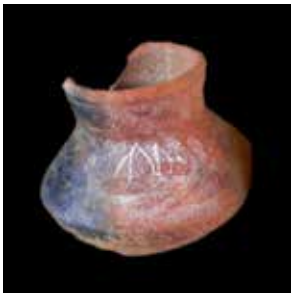
Sign_3.104_KLD_ ASI-G-0205

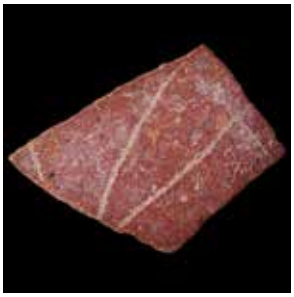


Sign_3.105_Sembiyankandi-yur-G-2

Sign No.4-Base & Variants

Plate 5.29

Sign_4.0_KLD_TNS-DA-G-0522



Sign_4.1_TKP-G-4740

Sign_4.2_KLD_ASI_G-0039

Sign_4.3_KLD_TNS-DA-G-0889

Sign No.4-Composites

Plate 5.30

Sign_4.1_PRR-G-0209

Sign_4.2_KML_1192

Sign_4.3_KRK-G-0124

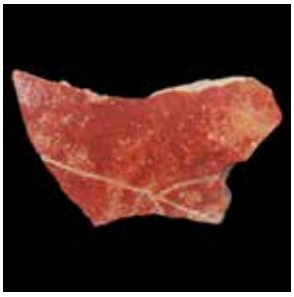
Sign_4.4_KLD_ASI-G-0420

Sign_4.5_TIV-G-0050

Sign_4.6_KLD_TNS-DA-G-0017

Sign_4.7_KMD-G-0052

Sign_4.8_KCM_G-0005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Sign_4.10_KRK_0002

Sign_4.11_KLD_0485

Sign_4.12_KNM_0080

Sign_4.13_KLD_TNS-DA-G-0666

Sign_4.14_PRR_0043

Sign_4.15_TKP_4137

Sign_4.16_KNM_0077

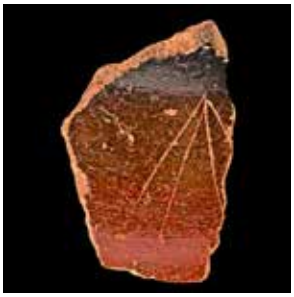
Sign_4.17_ADC_212

Sign_4.18_KDL_0219

Sign_4.19_SGI_0137_

Sign No.5-Base & Variants

Plate 5.31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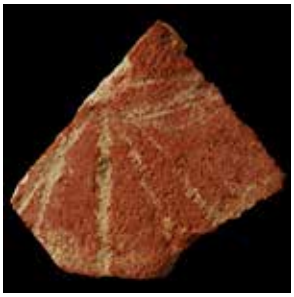
Sign_5.2_TKP-G-2421

Sign_5.3_TKP_G-0523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Sign_5.5_KNM-G-0166

Sign_5.6_KML_TNS-DA-G-0888

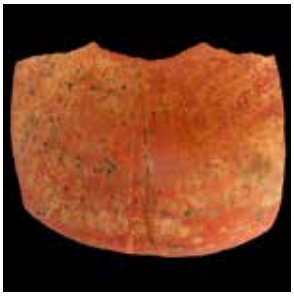
Sign_5.7_ARM-G-0007

Sign_5.8_TKP_G-0788

Sign_5.9_TKP_G-0883

Sign_5.10_NDR_G-0025

Sign_5.11_KLD_ASI-G-0185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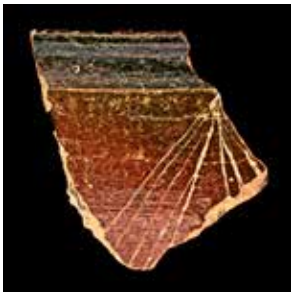
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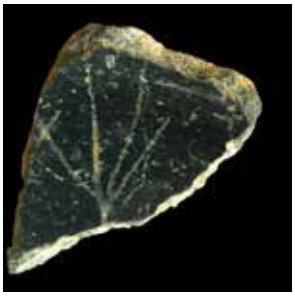
Sign_5.14_PBI-G-0074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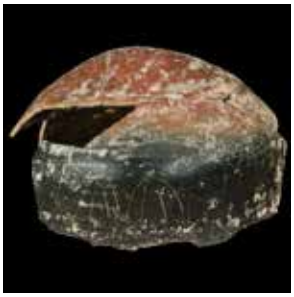
Sign_5.16_KLD_ASI-G-0312

Sign No.5-Composites

Plate 5.32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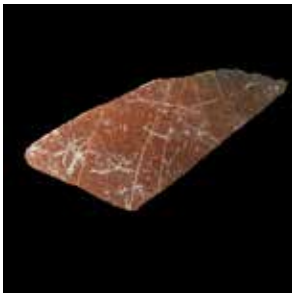
Sign_5.2_TIV_0021

Sign_5.3_NDR_0009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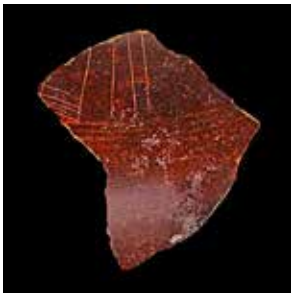
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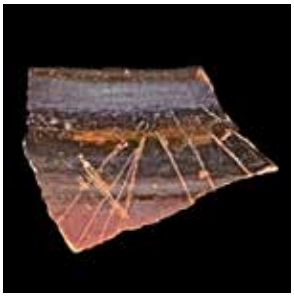
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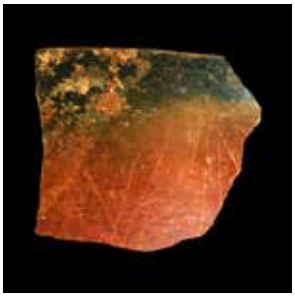
Sign_5.7_KML_0684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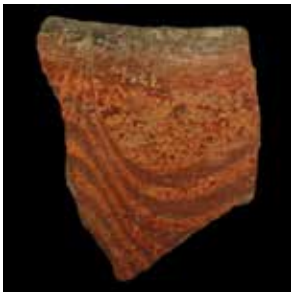
Sign_5.9_Tirukampuli-yur-G-0005

Sign_5.10_PBI-G-0531

Sign_5.11_PBI_0057

Sign_5.12_KML_TNS-DA-G-1238

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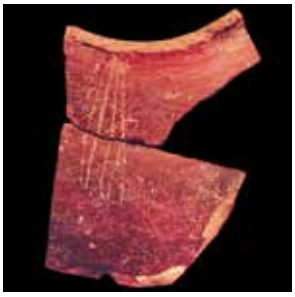
Sign_5.14_KDL_0152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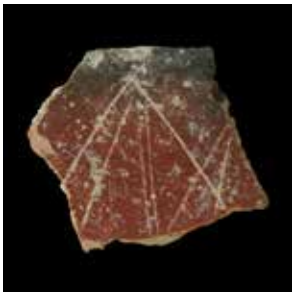
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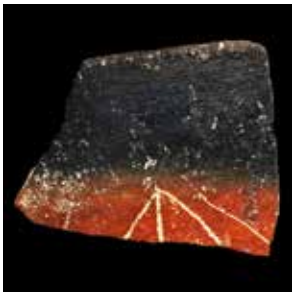
Sign_5.17_KML_1076

Sign_5.18_NDR-G-0055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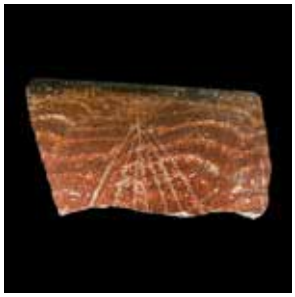
Sign_5.20_KNM_0110

Sign No.5-Composites

Plate 5.33

Sign_5.21_KDL_0378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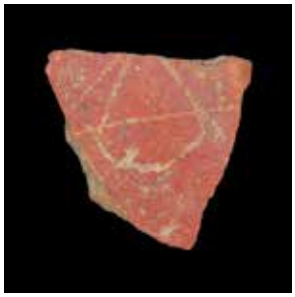
Sign_5.23_KLD_0604

Sign_5.24_KLD_0519

Sign_5.25_PBI_1023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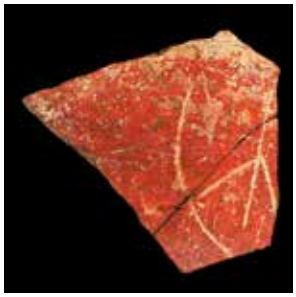
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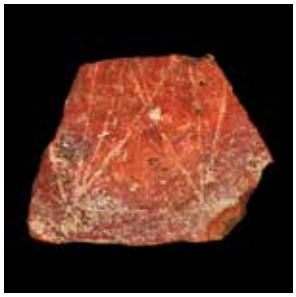
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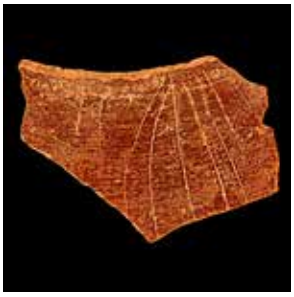
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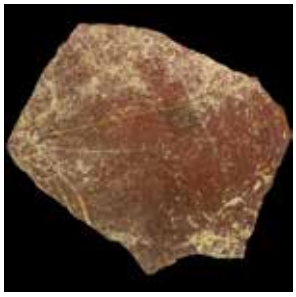
Sign_5.30_KCM_0005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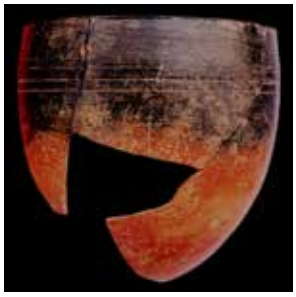

Sign_5.32_SGI(VPT)0150_SGI(VPT)

Sign_5.33_KML_0154

Sign_5.34_KLD_0299_

Sign No.6-Base & Variants

Plate 5.34

Sign_6.0_KML_TNS-DA-G-1313

Sign_6.1_KLD_TNS-DA-G-0823

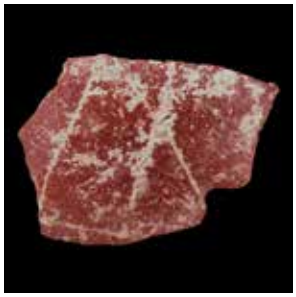
Sign_6.2_TKP-G-0847

Sign_6.3_KDL_TU-PU-G-0248

Sign_6.4_KRK-G-0102

Sign_6.5_TKP_G-0760

Sign_6.6_MGD_G-0036



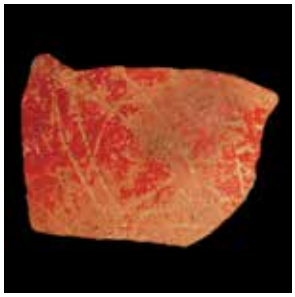
Sign_6.7_KRK-G-0204

Sign_6.8_KML_TNS-DA-G-1049

Sign No.6-Composites

Plate 5.35

Sign no_6.1C_V-AGM_0305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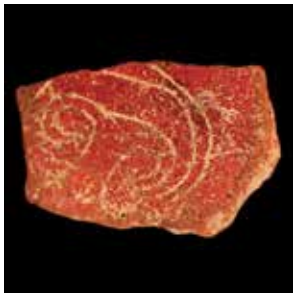
Sign no_6.3C_KML_0771

Sign no_6.4C_KLD_0376

Sign no_6.5C_AGM_0169

Sign no_6.6C_KNM_0095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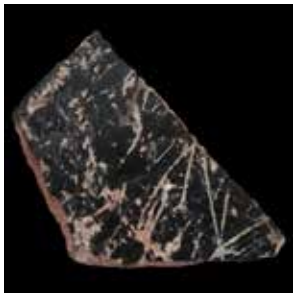
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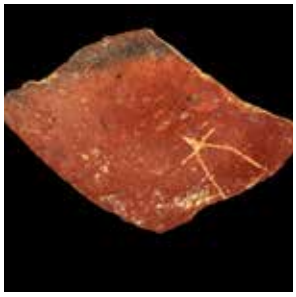
Sign no_6.10C_TKP_4079

Sign no_6.11C_KLD_0278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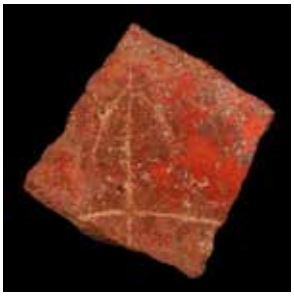
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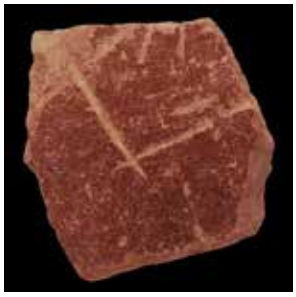
Sign no_6.14C_KRK_0011

Sign no_6.15C_KML_0720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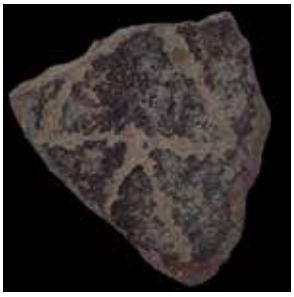
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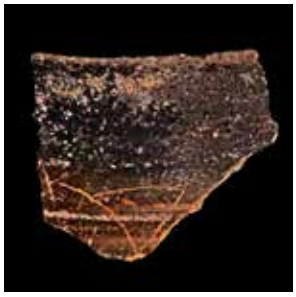
Sign no_6.18C_TKP_0043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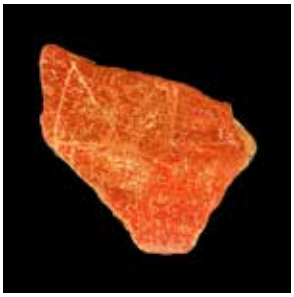
Sign no_6.20_KDL_0332

Sign No.6-Composites

Plate 5.36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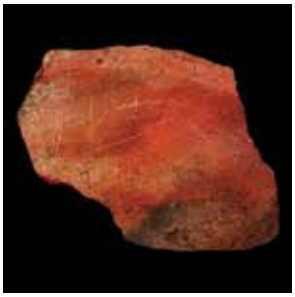
Sign no_6.22_KDL_0182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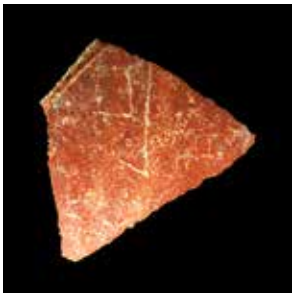
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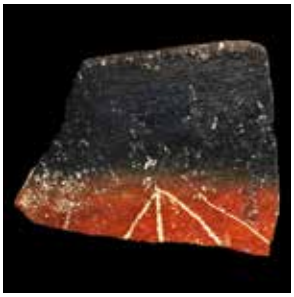
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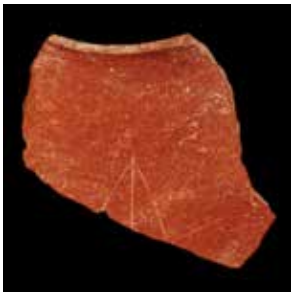
Sign no_6.26C_KNM_0182

Sign no_6.27C_TKP_4076

Sign no_6.28C_AGM_0217

Sign no_6.29C_KLD_0322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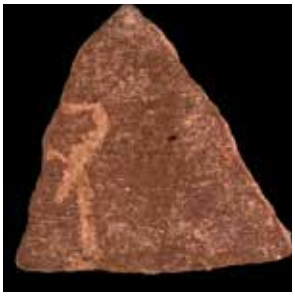
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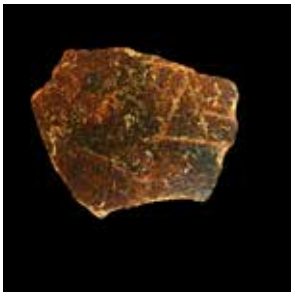
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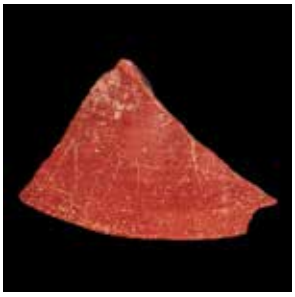
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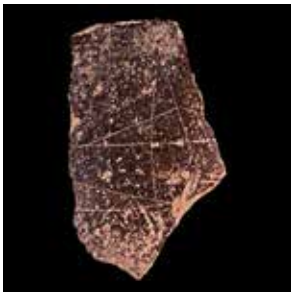
Sign no_6.36_PRR_0145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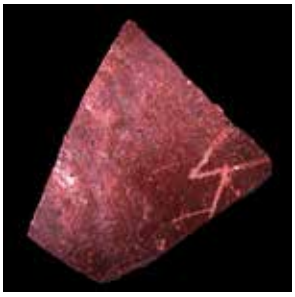
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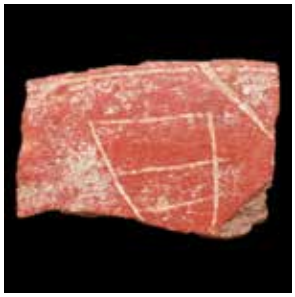
Sign no_6.40C_KNM_0012

Sign No.7-Base & Variants

Plate 5.37

Sign_7.0_ARM-G-0001



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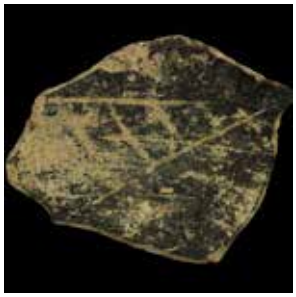


Sign_7.2_TKP_G-0628

Sign_7.3_SGI_G-0083

Sign_7.4_KNM_G-0096

Sign No.7-Composites

Plate 5.38

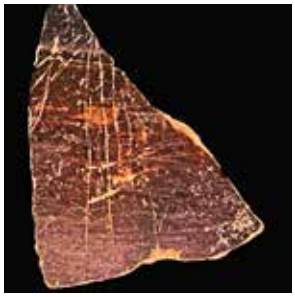
Sign no_7.1C_KLD_ASI-G-0550

Sign no_7.2C_KLD_ASI_0257

Sign no_7.3_PKM_0038

Sign no_7.4_ADC_0049

Sign no_7.5C_PBI_0836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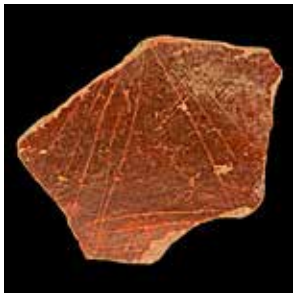
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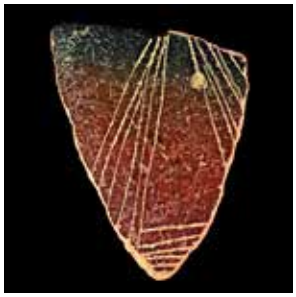
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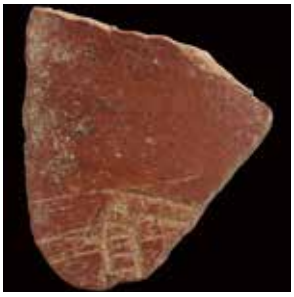
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Sign no_7.10C_KRR_0027

Sign no_7.11C_KLD-ASI_0256

Sign no_7.12_KDL-TU-PU_0322

Sign no_7.13C_KLD_ASI_0649

Sign no_7.14C_PRR_0066

Sign no_7.15C_AGM_0066

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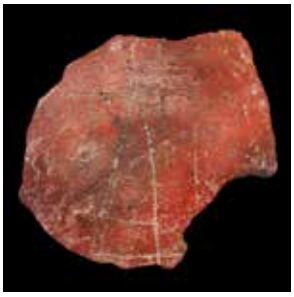
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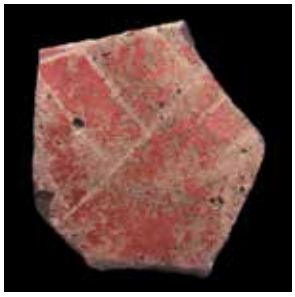
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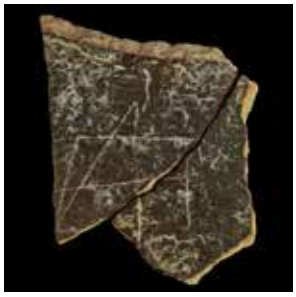
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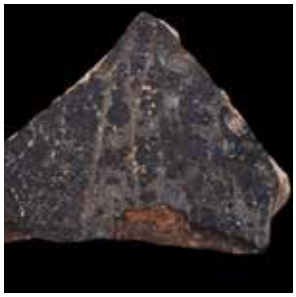
Sign no_7.20C_KDL-TU-PU_0522

Sign No.7-Composites

Plate 5.39

Sign no_7.21C_KLD_TNS-DA__0053

Sign no_7.22C_PKM_0040_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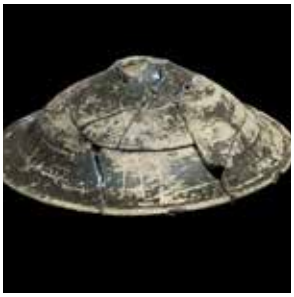
Sign no_7.24C_KRR_0105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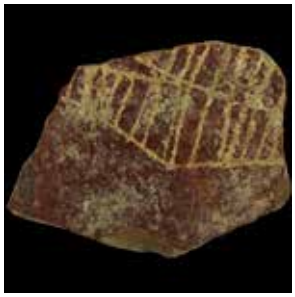
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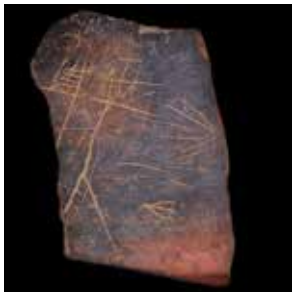
Sign no_7.27C_KLD_ASI_0403

Sign no_7.28C_PRR_0054

Sign no_7.29C_KRR_0200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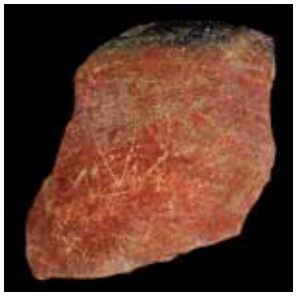
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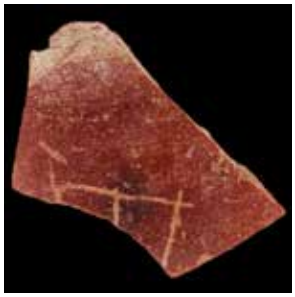
Sign no_7.32_KNM_0084

Sign No.8-Base & Variants

Plate 5.40

Sign_8.0_KDL_TU-PU-G-0109



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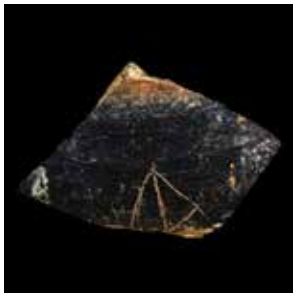

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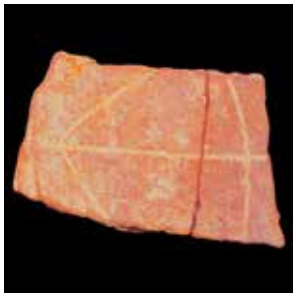


Sign_8.3_KLD_TNS-DA-G-0885

Sign_8.4_KML_TNS-DA-G-1102

Sign_8.5_TKP_G-2729

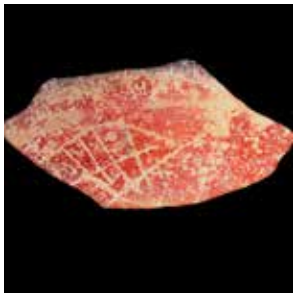
Sign No.8-Composites

Plate 5.41

Sign_8.1C_KLD_ ASI-G-0652

Sign_8.2C_KDL_TU-PU-G-0337

Sign_8.3C_ARM_0002



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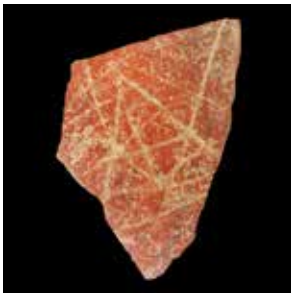


Sign_8.5C_KML_0375

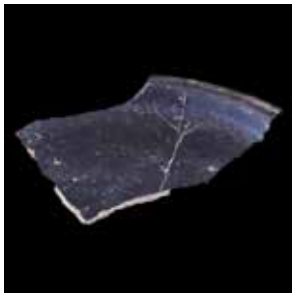
Sign_8.6C_KDL-TU-PU_0337

Sign_8.7C_KRK-G-0090

Sign No.9-Base & Variants

Plate 5.42

Sign_9.0_KRK-G-0001



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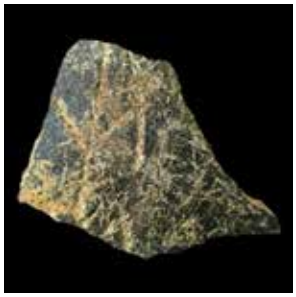

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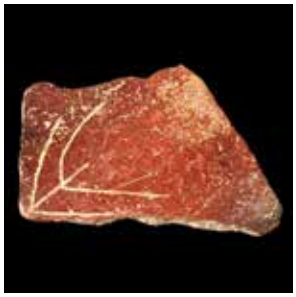
Sign_9.3_TKP_G-0830

Sign_9.4_TKP_G-0799

Sign_9.5_TKP_G-0795



Sign_9.6_KLD_ASI-G-0200

Sign No.9-Composites

Plate 5.43

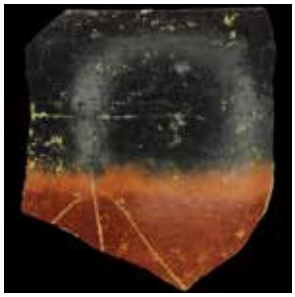
Sign_9.1C_TKP-G-3917

Sign_9.2_ADC_0125

Sign_9.3_ADC_0316

Sign_9.4C_V-AGM_0086

Sign_9.5C_KLD_ ASI-G-0419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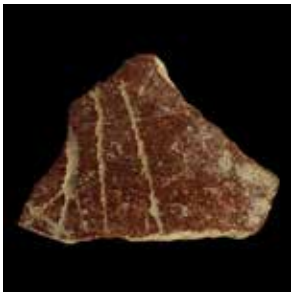
Sign_9.8C_ADC_0920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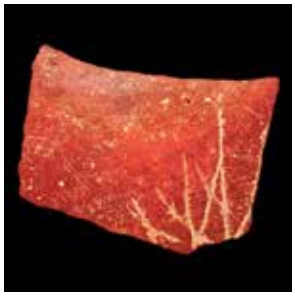
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Sign_9.11C_MGD_0061

Sign_9.12C_KLD_0480

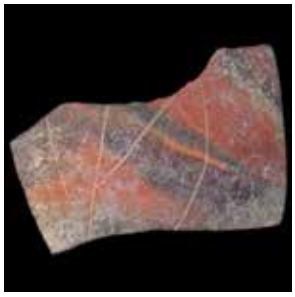
Sign_9.13C_KLD_ ASI-G-0348

Sign_9.14C_KRR-G-0028

Sign_9.15C_KLD_ ASI-G-0415

Sign_9.16C_KDL_TU-PU-G-0509

Sign_9.17_TKP_068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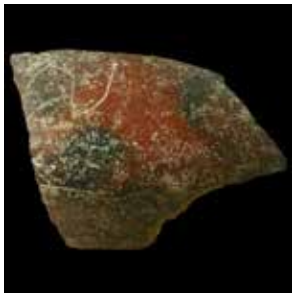
Sign_9.19_KLD_0201

Sign_9.20C_KLD_ ASI-G-0425

Sign No.9-Composites

Plate 5.44

Sign_9.21C_KML_TNS-DA-G-0445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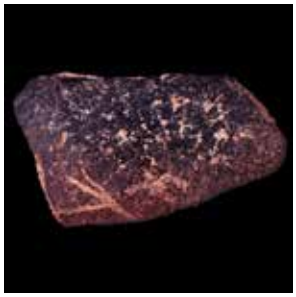
Sign_9.23C_KLD_ASI-G-0433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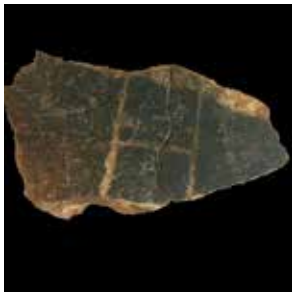
Sign_9.25C_V-AGM-G-0054

Sign_9.26C_TKP-G-0878

Sign_9.27_TKP_0878

Sign_9.28_KML_0100

Sign_9.29_TKP_2676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Sign_9.31_KML_0712

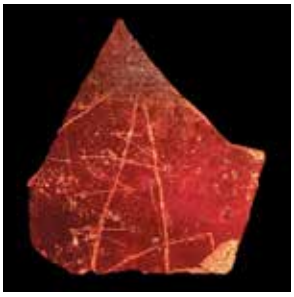
Sign_9.32_TKP_0792

Sign_9.33_TKP_4089

Sign_9.34_TKP_4585

Sign_9.35C_KNM_0197

Sign_9.36C_KLD_ASI-G-0328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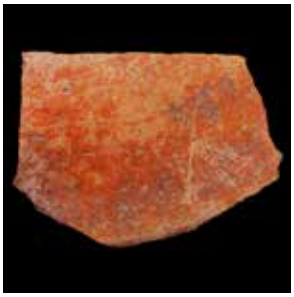
Sign_9.38C_KNM_0164

Sign_9.39C_KLD_ASI-G-0514

Sign_9.40_KDL_0373

Sign No.9-Composites

Plate 5.45



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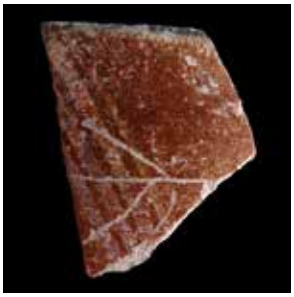
Sign_9.42C_TKP-G-1141

Sign No.10-Base & Variants

Plate 5.46



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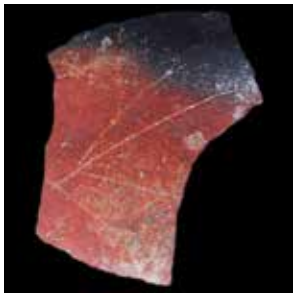


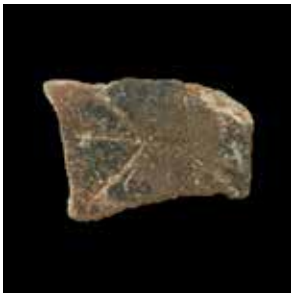
Sign_10.2_KLD_TNS-DA-G-0473

Sign_10.3_MGD_G-0065

Sign_10.4_TKP_G-1195

Sign No.10-Composites

Plate 5.47



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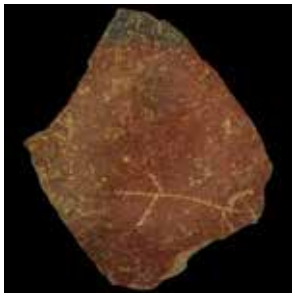

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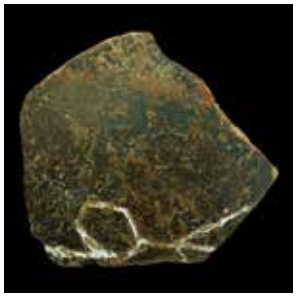

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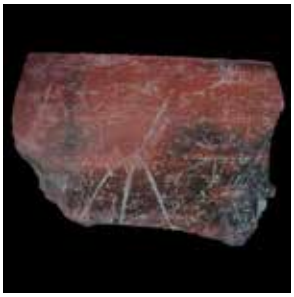
Sign_10.4_KML-G-0372

Sign_10.5_KNM-G-0069

Sign No.11-Base & Variants

Plate 5.48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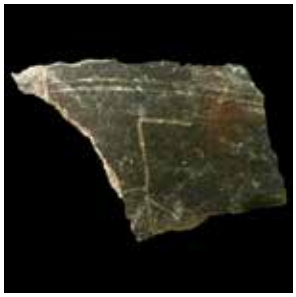
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Sign_11.4_KDL_TU-PU-G-0380

Sign_11.5_KNM-G-0255

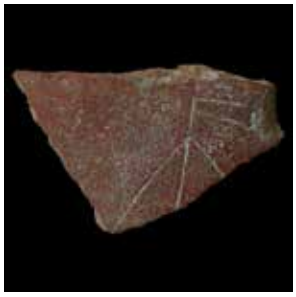
Sign_11.6_AGM-G-0124

Sign_11.7_PMR-G-0030

Sign_11.8_KLD_TNS-DA-G-0403

Sign_11.9_KRR-G-0140

Sign_11.10_KLD-TNS-DA-G-0786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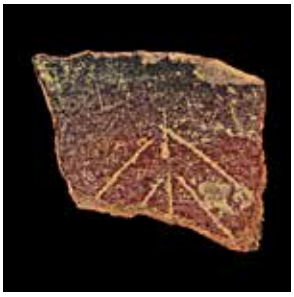
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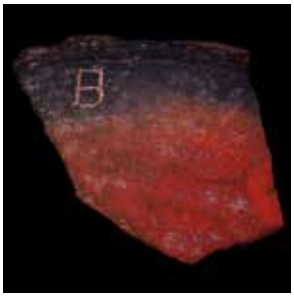
Sign No.11-Composites

Plate 5.49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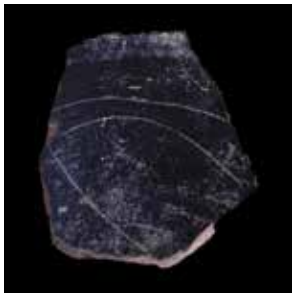
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Pattaraiperumpudhur_G-0099

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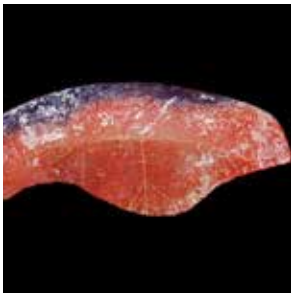
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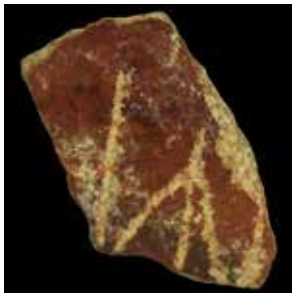
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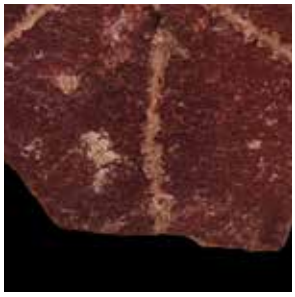
Sign_11.5_KNM-G-0186

Sign_11.6_KNM-G-0254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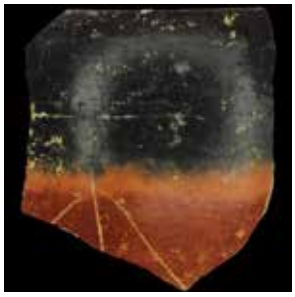
Sign_11.8_KRR-G-0013

Sign_11.9_Sign_11.9C_ PBI-G-0188

Sign_11.10_KNM-G-0163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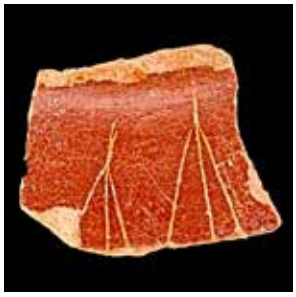
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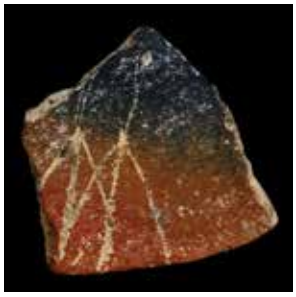
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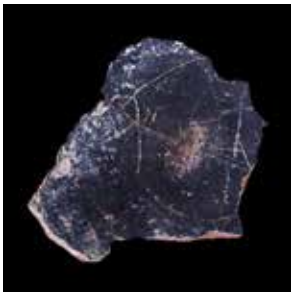
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Sign_11.15_KLD_ ASI-G-0198

Sign_11.16_KLD-TNS-DA-G-1009

Sign_11.17_KLD_ ASI-G-0522

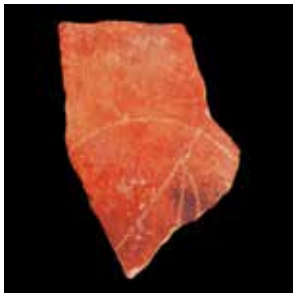
Sign No.11-Composites

Plate 5.50

Sign_11.18_KLD-TNS-DA-G-0476

Sign_11.19_KDL_TU-PU-G-0004

Sign_11.20_TKP-G-3040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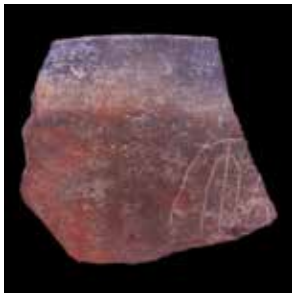
Sign_11.22_AGM-G-0271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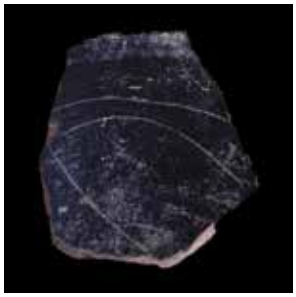
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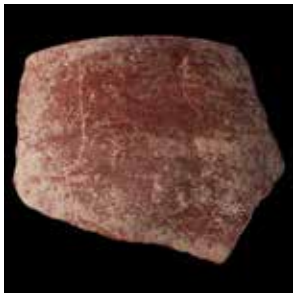
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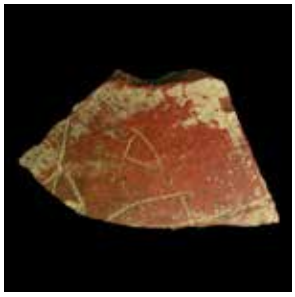
Sign_11.27_KLD-TNS-DA-G-0662

Sign_11.28_TKP-G-1051

Sign_11.29_KDL_TU-PU-G-0512

Sign_11.30_TKP-G-1149

Sign_11.31_PBI-G-0683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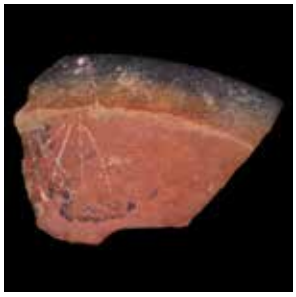
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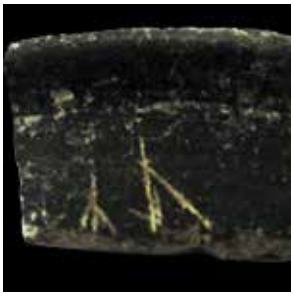
Sign_11.34_PRR-G-0009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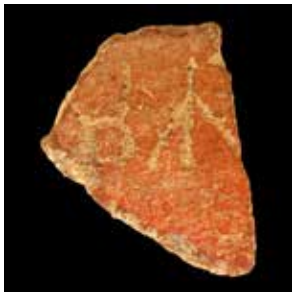
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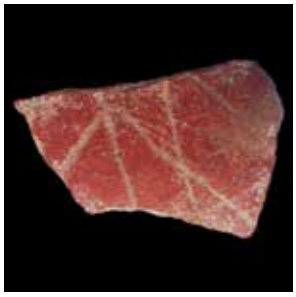
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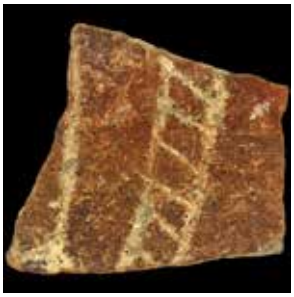
Sign No.11-Composites

Plate 5.51

Sign_11.39_KLD-TNS-DA-G-0401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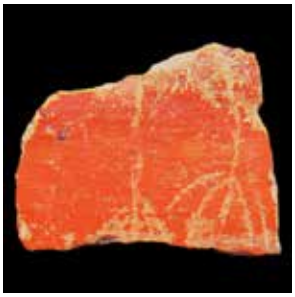
Sign_11.41_KNM-G-0285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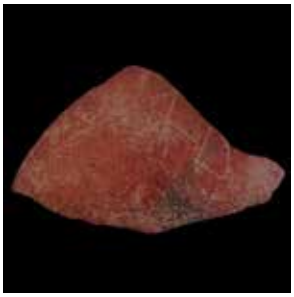
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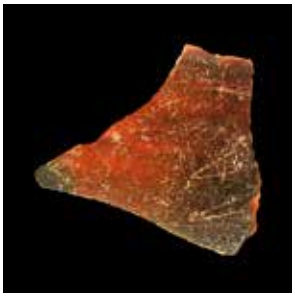
Sign_11.44_KML-G-1285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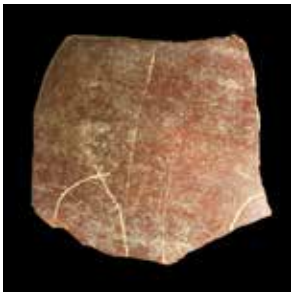
Sign_11.46_KLD-TNS-DA-G-1308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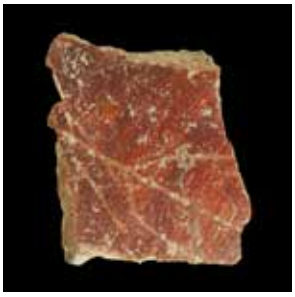
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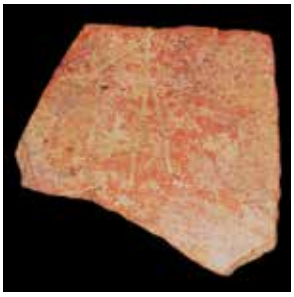
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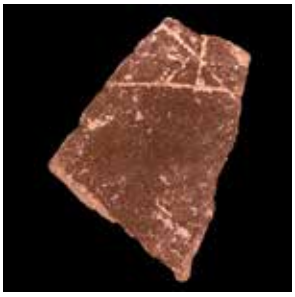
Sign_11.52_KLD-ASI-G-0561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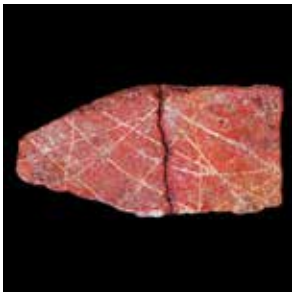
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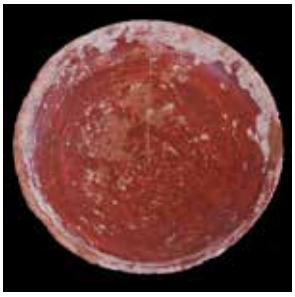
Sign_11.55_TKP-G-2500

Sign_11.56_TKP-G-2595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Sign_11.58_PRR-G-0121

Sign No.12-Base & Variants

Plate 5.52

Sign_12.0_KDL_TNS-DA-G-0977

Sign_12.1_AGM-G-0215

Sign_12.2_KDL_TU-PU-G-0323

Sign_12.3_TKP_G-4452

Sign No.12-Composites

Plate 5.53

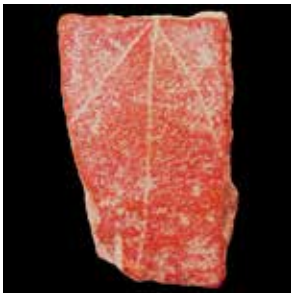
Sign_12.1C_AGM-G-0151

Sign_12.2C_KDL_TU-PU-G-0187

Sign_12.3C_KDL_TU-PU-G-0021

Sign No.13-Base & Variants

Plate 5.54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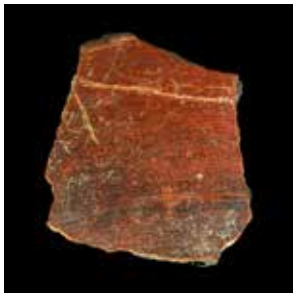
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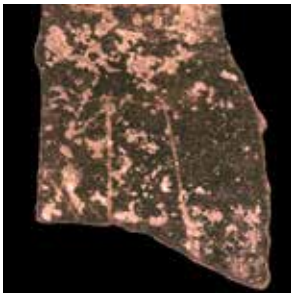
Sign_13.3_SGI-G-0130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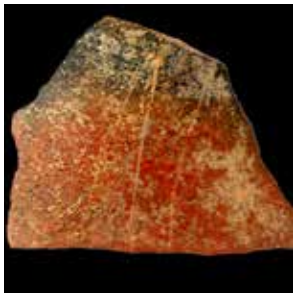
Sign_13.6_KRK-G-0040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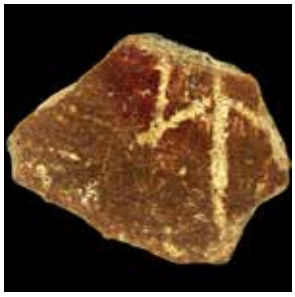
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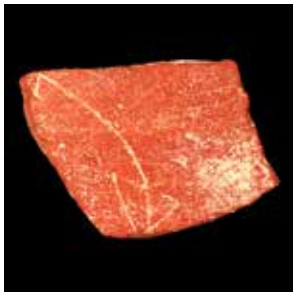
Sign_13.10_PMR_G-0019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Sign_13.12_AGM-G-0269

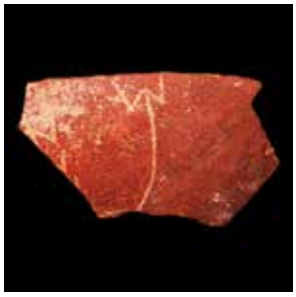
Sign_13.13_TKP_G-0746

Sign_13.14_KLD_TNS-DA-G-0354

Sign_13.15_KLD_ASI-G-0203

Sign_13.16_MGD-G-0144

Sign_13.17_ADC_G_0482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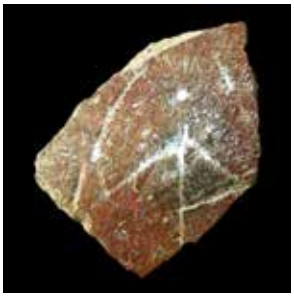
Sign_13.19_KLD_ASI_G-0203

Sign No.13-Base & Variants

Plate 5.55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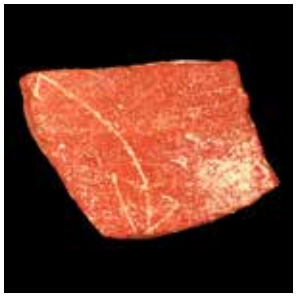
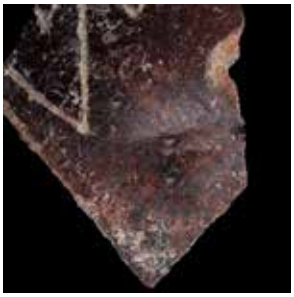
Sign_13.21_TKP-G-3710

Sign_13.22_TKP-G-0491

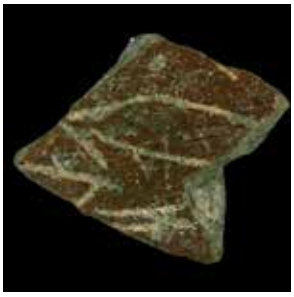

Sign_13.23_KLD_ ASI_G-0754


Sign_13.24_KDL-TU-PU_G_0428

Sign_13.25_KLD_TNS-DA-G-0642

Sign_13.26_TKP_G-0983

Sign_13.27_TKP_G-0354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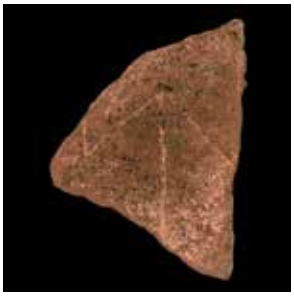
Sign_13.29_TKP_G-1117

Sign_13.30_KDL_TU-PU-G-0139

Sign_13.31_MGD_G_0074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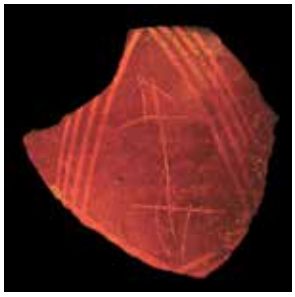

Sign_13.33_KLD_ ASI-G-0796

Sign_13.34_KDL_TU-PU-G-0353

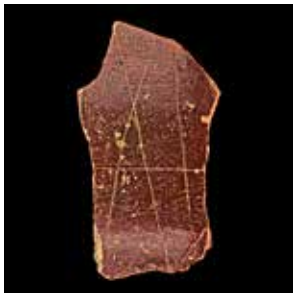
Sign_13.35_V-AGM-G-0082

Sign No.13-Composites

Plate 5.56

Sign_13.1C_TKP-G-1011

Sign_13.2_TKP_3908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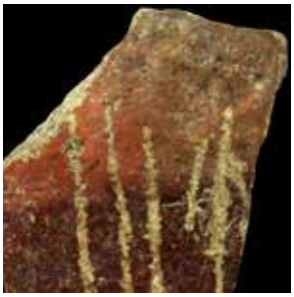
Sign_13.4C_TKP-G-0320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Sign_13.6_TKP_0356

Sign_13.7_KLD_0730

Sign_13.8C_KLD_AS_G_0396

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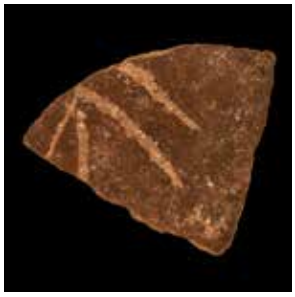
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Sign_13.11C_TKP-G-1167

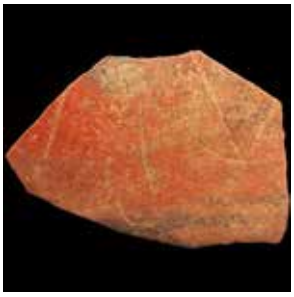
Sign_13.12_KLD_0599

Sign_13.13_TKP-G-0983

Sign_13.14_TKP-G-0982

Sign_13.15_KLD_0223

Sign_13.16C_TKP-G-0841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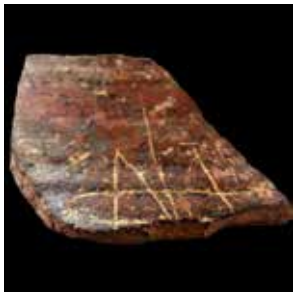
Sign_13.18_KML_1282


Sign_13.19_PRR_0058

Sign_13.20C_KNM_0081

Sign No.13-Composites

Plate 5.57

Sign_13.21_KNM_0012

Sign_13.22_KNM_0089

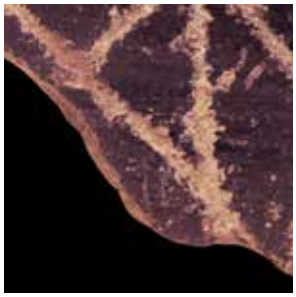
Sign_13.23C_TKP-G-3606

Sign_13.24_V-AGM_0155

Sign_13.25_KNM_0085

Sign_13.26_KDL_0062

Sign_13.27_V-AGM_0015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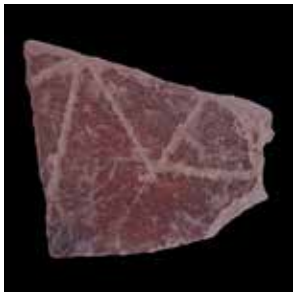
Sign_13.29_KLD_0766

Sign_13.30C_AP-KL_G_0003

Sign_13.31_AGM_0292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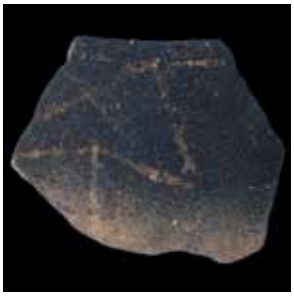
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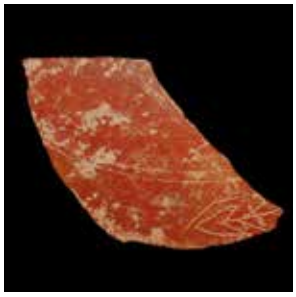
Sign_13.34_0045_TIV

Sign_13.35_TKP-G-1094


Sign_13.36_KLD_0638

Sign_13.37_V-AGM_0176

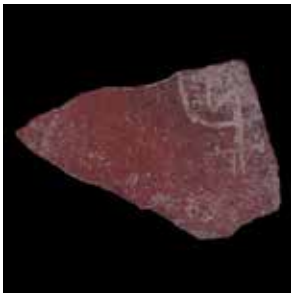
Sign_13.38_KRK_0130

Sign_13.39_TKP-G-0670

Sign_13.40C_TKP-G-4507

Sign No.13-Composites

Plate 5.58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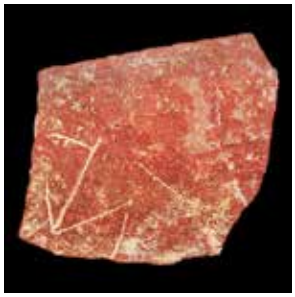
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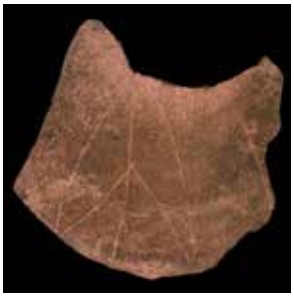
Sign_13.43_AGM_0154

Sign_13.44_TKP-G-2665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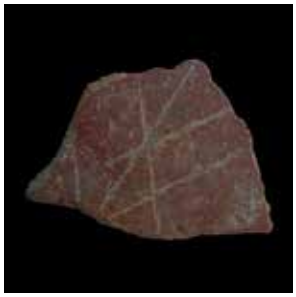
Sign_13.46_KLD_0400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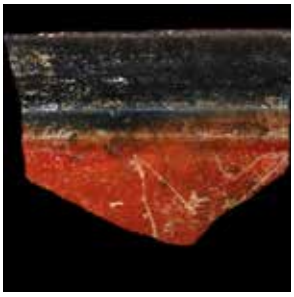

Sign_13.49_KLD_0032

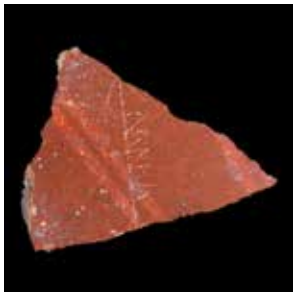
Sign_13.50_KLD_0017

Sign_13.51C_KDL_TU-PU_G_0418

Sign_13.52_KNM_0103

Sign_13.53_KNM_0112

Sign_13.54_KNM_0111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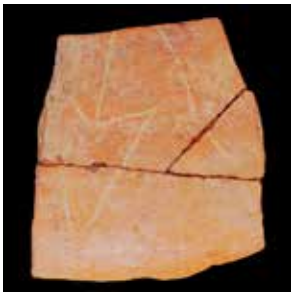
Sign_13.56_KNM_0175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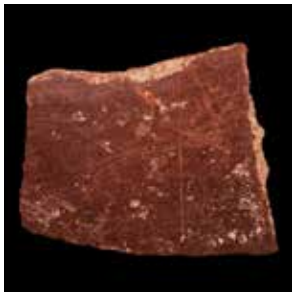
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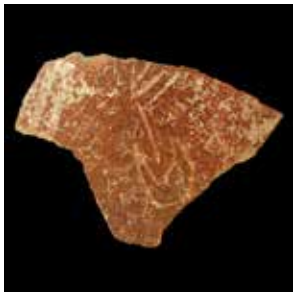
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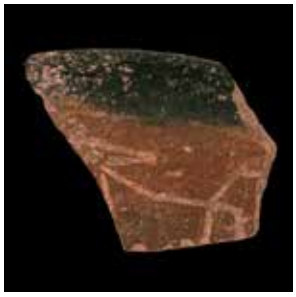

Sign_13.60_TKP-G-1206

Sign No.13-Composites

Plate 5.59

Sign_13.61_KLD_0644

Sign_13.62_KDL_0486

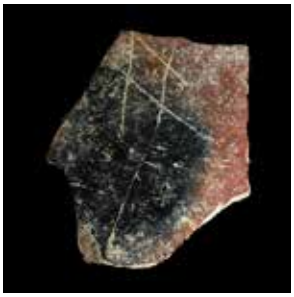
Sign_13.63_V-AGM_0110

Sign_13.64C_TKP-G-3422

Sign_13.65_ADC_0221

Sign No.14-Base & Variants

Plate 5.60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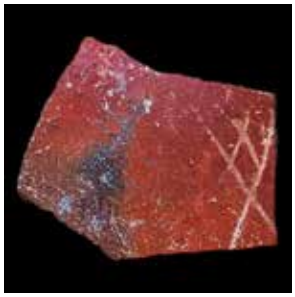
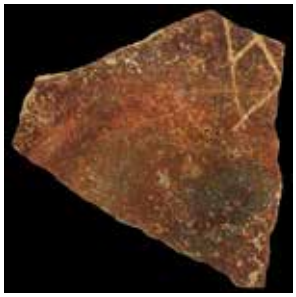

Sign_14.1_KLD_ASI-G-0383

Sign_14.2_KDL_TU-PU-G-0538

Sign_14.3_KLD_ASI-G-0563

SIgn_14.4_TKP_G-0130

Sign_14.5_TKP_G-0919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Sign_14.7_KML_TNS-DA_1289

Sign_14.8_TKP_G-1019

Sign_14.9_KLD_ASI-G-0446

Sign_14.10_TIV_G_0078

Sign_14.11_KNM_G-0119

Sign_14.12_TIV_G-0085

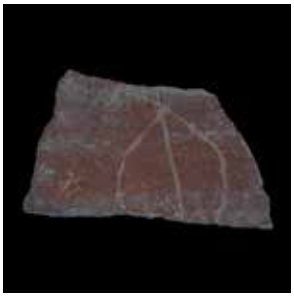
Sign_14.13_TKP_G-0629

Sign_14.14_TKP_G-2266

Sign_14.15_KLD_ASI-G-0691

Sign No.14-Composites

Plate 5.61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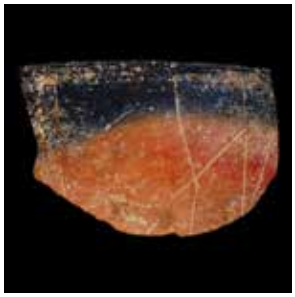
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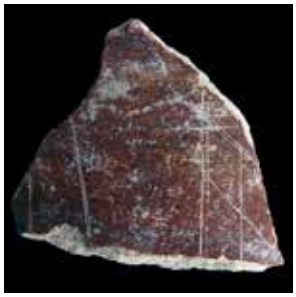
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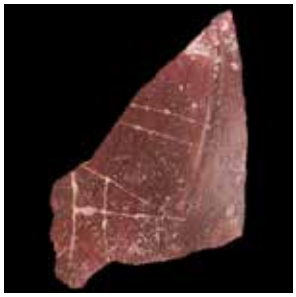
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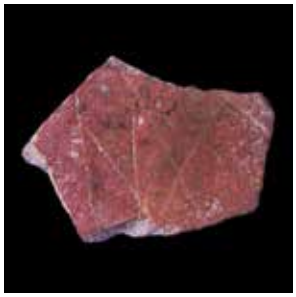
Sign_14.5_KLD-TNS-DA_0660

Sign_14.6C_TKP_G_1068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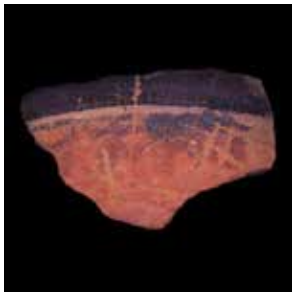
Sign_14.9C_KLD_ASI-G-0650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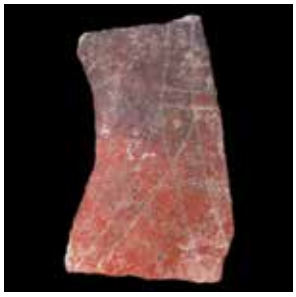
Sign_14.11_TKP_3425

Sign_14.12_KLD-TNS-DA_0028

Sign_14.13_MGM_0017

Sign_14.14_TKP_1211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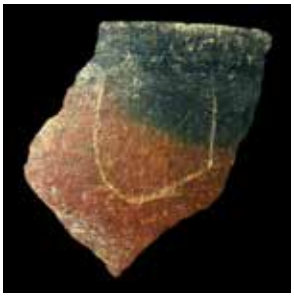
Sign_14.16C_PRR_G_0098

Sign No.15-Base & Variants

Plate 5.62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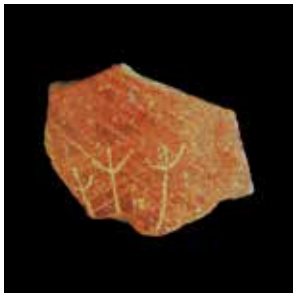
Sign_15.1_KLD_TNS-DA-G-1247

Sign_15.2_TKP_G-3104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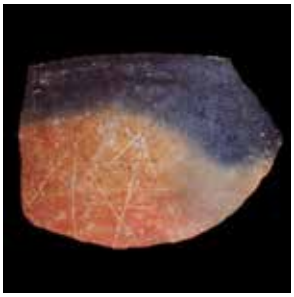
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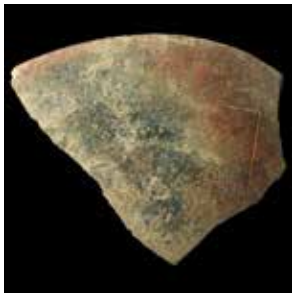
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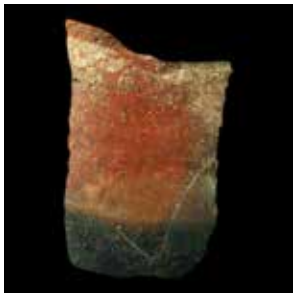
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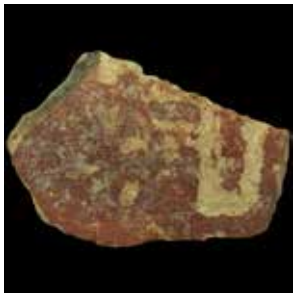
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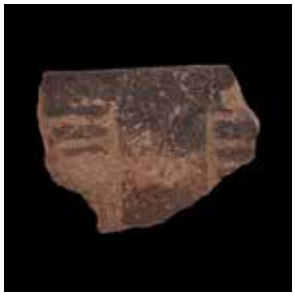
Sign_15.8_TKP_G-0202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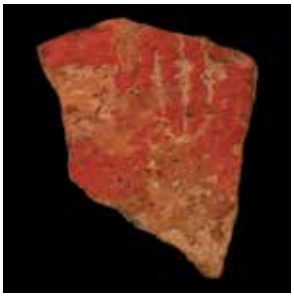
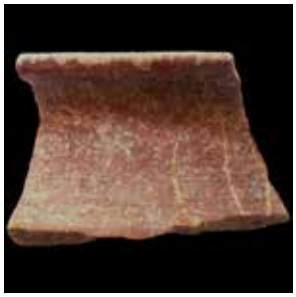
Sign No.15-Composites

Plate 5.63


Sign_15.1C_KLD_ ASI-G-0351

Sign_15.2C_KLD_0802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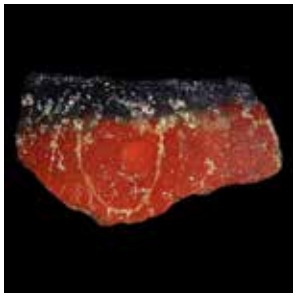
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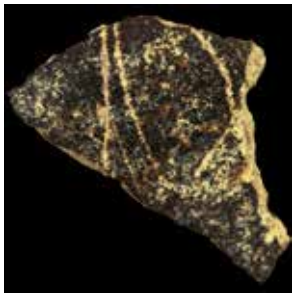
Sign_15.5_TKP_2549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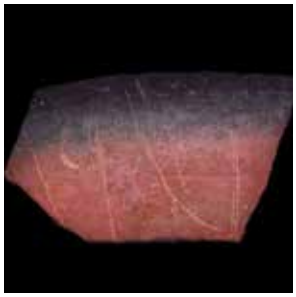
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Sign_15.8C_PMR_G_0042

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Sign_15.10C_KLD-ASI_0543

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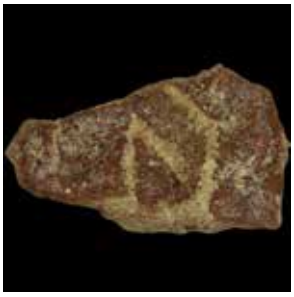
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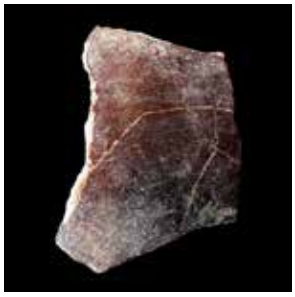
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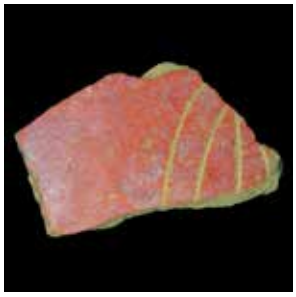
Sign_15.15C_KLD_0450

Sign_15.16_AGM_0264

Sign_15.17C_KLD_ ASI_G_0408

Sign_15.18_TKP_3431

Sign_15.19C_KLD-ASI_0025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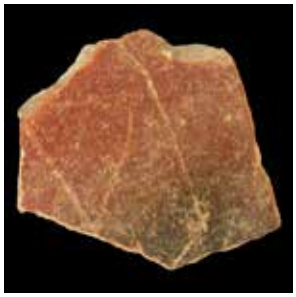
Sign No.15-Composites

Plate 5.64

Sign_15.21C_KLD_ASI_G_0183

Sign_15.22_AGM_0037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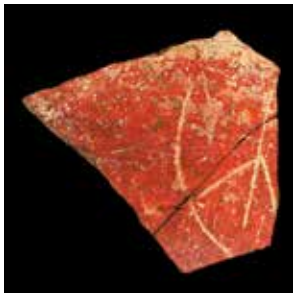
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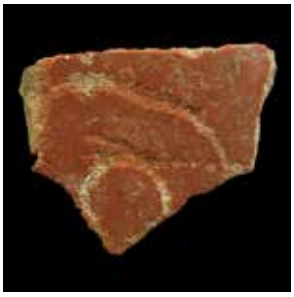
Sign_15.28_KLD_0836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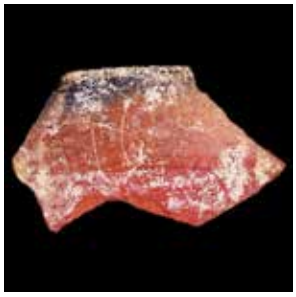
Sign_15.30_TKP_2947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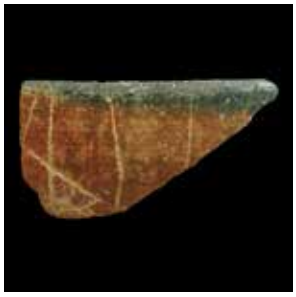
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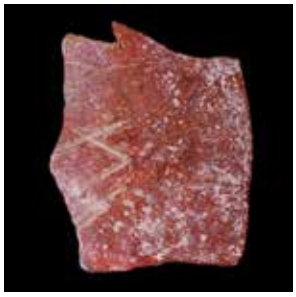
Sign_15.33_AGM_0375

Sign_15.34_KLD_0723

Sign_15.35C_KLD_ASI_G_0123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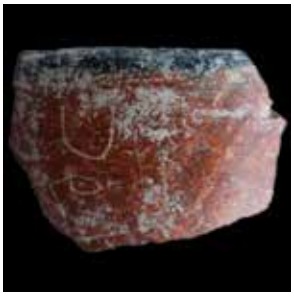

Sign_15.37_KDL_0116

Sign_15.38C_KLD-ASI_0474

Sign_15.39C_KRR_G_0064

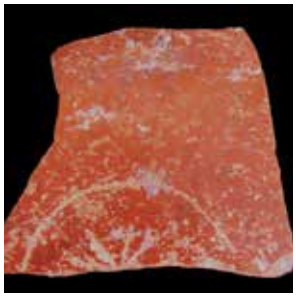
Sign_15.41_KLD-ASI_0534

Sign No.15-Composites

Plate 5.65

Sign_15.42C_KLD-TNS-DA_G_0348

Sign_15.43_V-AGM_0114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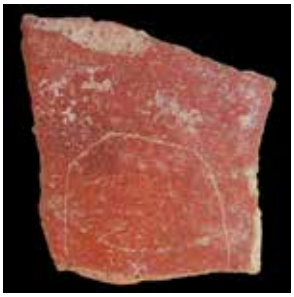
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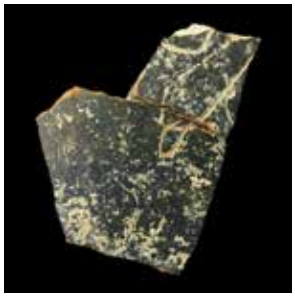
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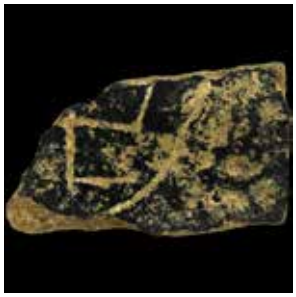
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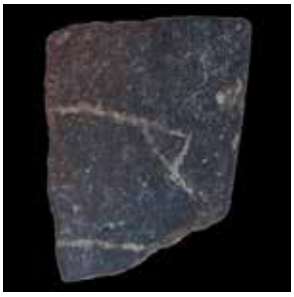
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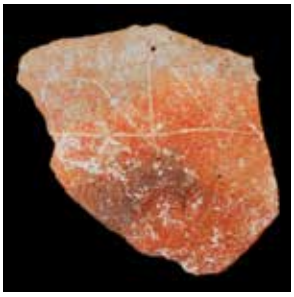
Sign_15.51_AGM_0019

Sign_15.52_AGM_0206

Sign_15.53_KDL_0222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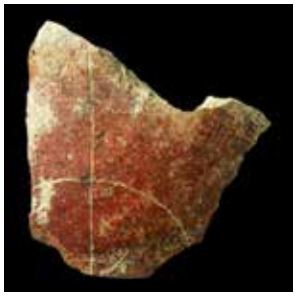
Sign_15.55_KML_0154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Sign_15.57_KML_1065

Sign_15.58_SGI_G_0109

Sign_15.59_TKP_0697

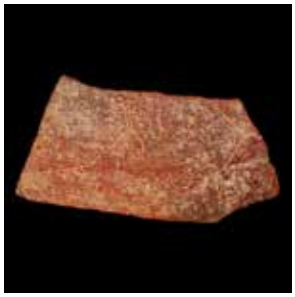
Sign_15.60_TKP_0585

Sign_15.61_TKP_4039

Sign No.15-Composites

Plate 5.66

Sign_15.62_KLD_0152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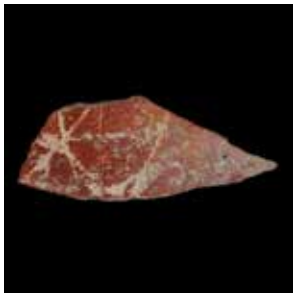
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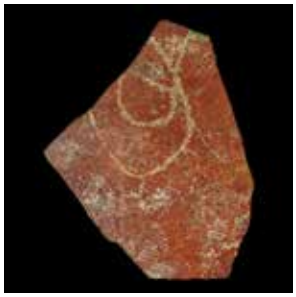
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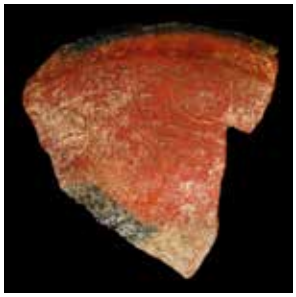
Sign_15.66_KLD_0411

Sign_15.67_KNM_G_0227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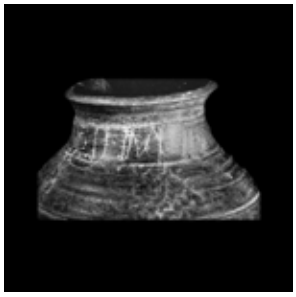
Sign_15.69C_MGM-G-0007

Sign_15.70_KLD-TNS-DA_0027

Sign_15.71C_KLD-TNS-DA_G_0614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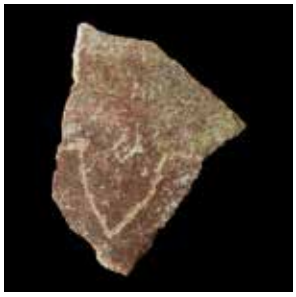
Sign_15.73_TKP_3080

Sign_15.74C_KML_G_1057

Sign_15.75_KLD-TNS-DA_0329

Sign_15.76_KML_0357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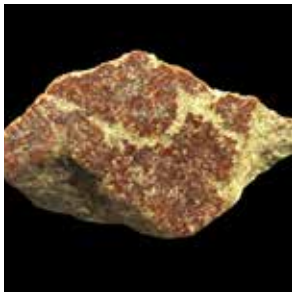
Sign_15.78_MGD_0037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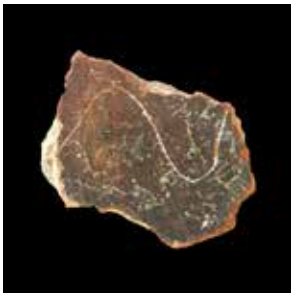
Sign_15.80_TKP_0658

Sign_15.81_KML_0872

Sign No.15-Composites

Plate 5.67



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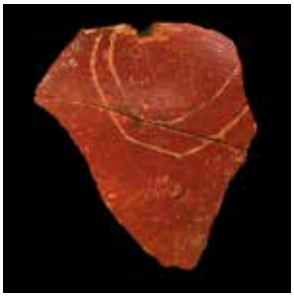
Sign_15.83_TKP_0881

Sign_16.40C_KRR_G_0006

Sign No.16-Base & Variants

Plate 5.68



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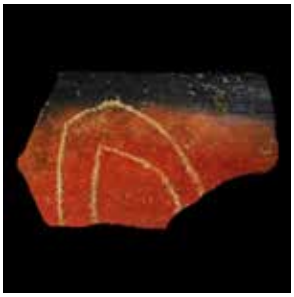

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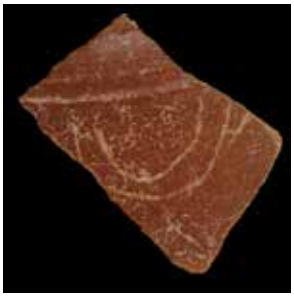
Sign_16.2_TKP-G-0791

Sign_16.3_KLD_TNS-DA-G-1116



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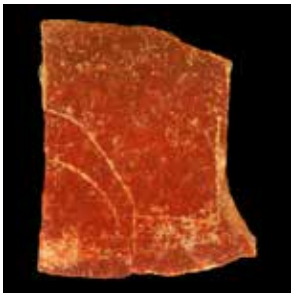


Sign_16.5_KML-TNS-DA_0194

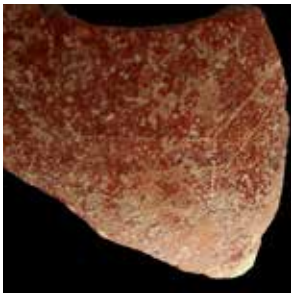
Sign_16.6_TKP_G-3082

Sign_16.7_KDL-TU-PU_G_0540

Sign No.16-Composites

Plate 5.69

Sign_16.1_KLD_0582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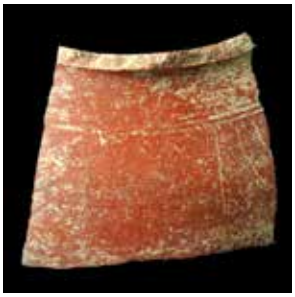
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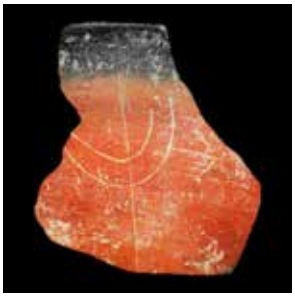
Sign_16.4_TKP_0763

Sign_16.5C_KML_0452

Sign_16.6_PBI_0071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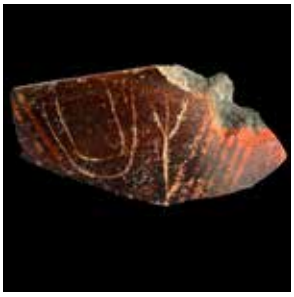
Sign_16.8_KLD_0217.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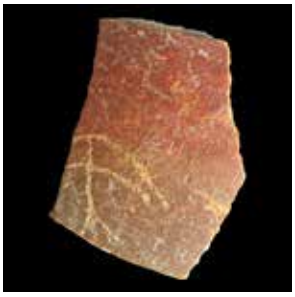
Sign_16.10_KML_0603

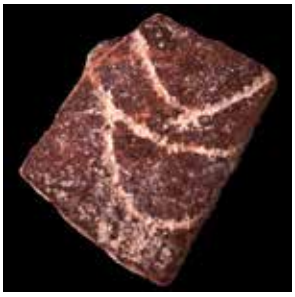

Sign_16.11_KML_0291

Sign_16.12_ADC_0208

Sign_16.13_KML_1307

Sign_16.14_KNM_0162

Sign_16.15_KNM_0120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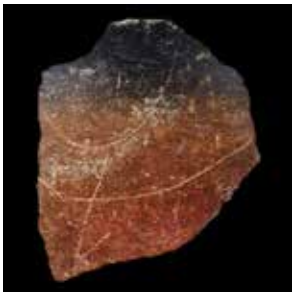
Sign_16.17_TKP_2890

Sign_16.18_KNM_0129

Sign_16.19_KLD_0350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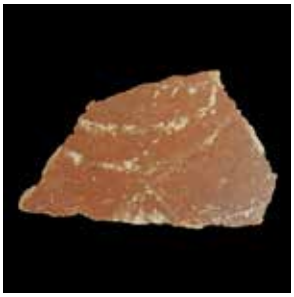
Sign No.16-Composites

Plate 5.70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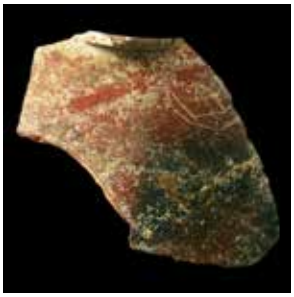
Sign_16.22C_KML_TNS-DA_G_0261

Sign_16.23_KNM_0260

Sign_16.24_PRR_0063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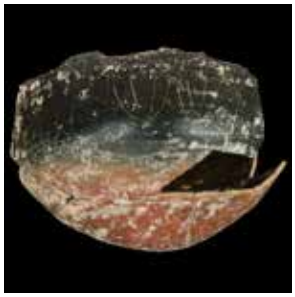
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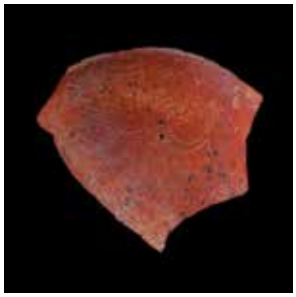
Sign_16.27C_KNM_G_0129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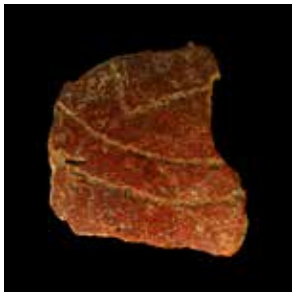
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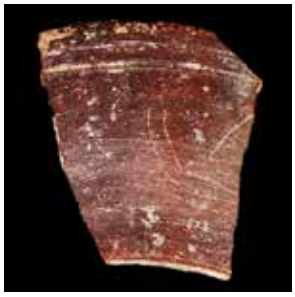
Sign_16.31_KML_0412

Sign_16.32_KML_0343

Sign_16.33_KMD_0010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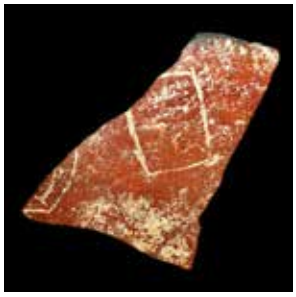
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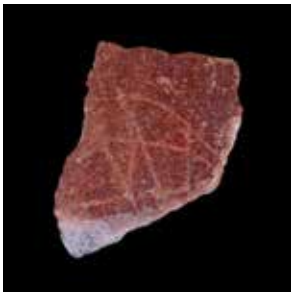
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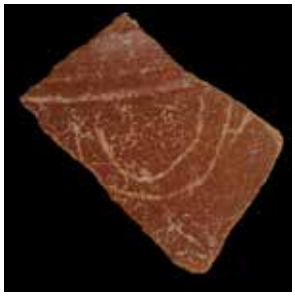
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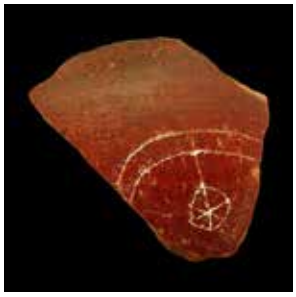
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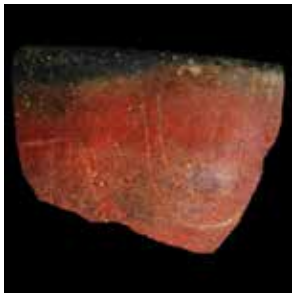
Sign_16.40_MGD_0082

Sign No.16-Composites

Plate 5.71

Sign_16.41_TKP_2400

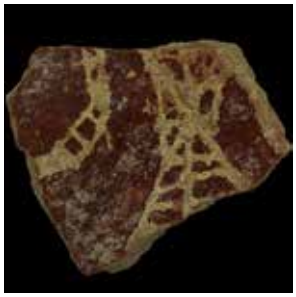

Sign_16.42_KLD_0036

Sign_16.43_TKP_3091_TKP

Sign_16.44_KML_1309_KML

Sign_16.45C_KNM_G_0110

Sign_16.46C_TIV_G_0056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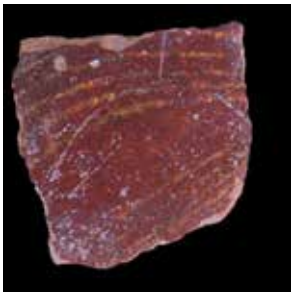
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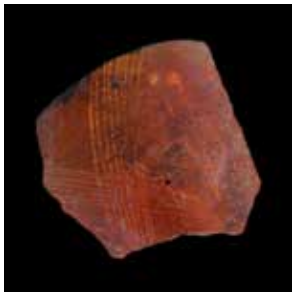
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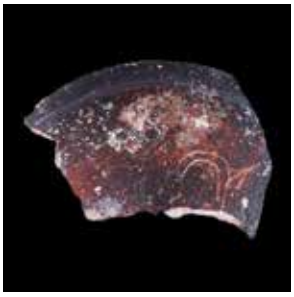
Sign_16.51_KNM_0284

Sign_16.52C_KNM_G_0065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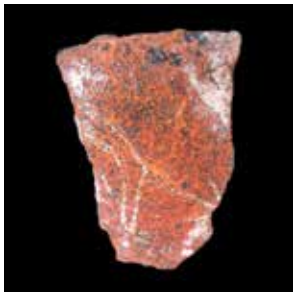
Sign_16.54_KNM_0135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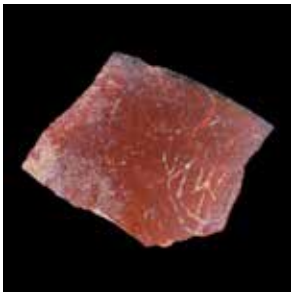
Sign_16.56_KNM_0067

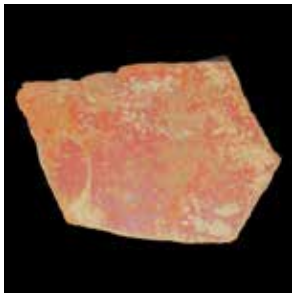

Sign_16.57_KNM_0281

Sign_16.58_KNM_0074

Sign No.17-Base & Variants

Plate 5.72

Sign_17.1_TKP-G-4569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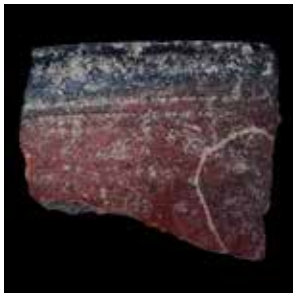
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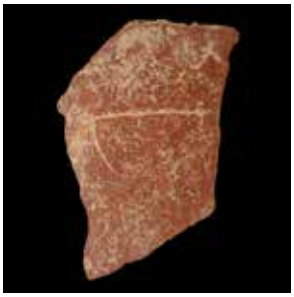
Sign_17.4_KRK-G-0296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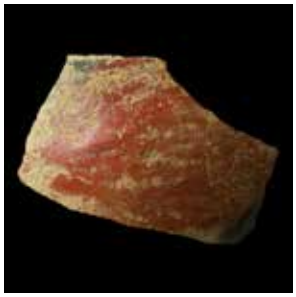
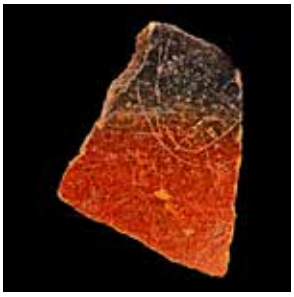
Sign_17.6_TKP-G-4383


Sign_17.7_MGD-G-0112

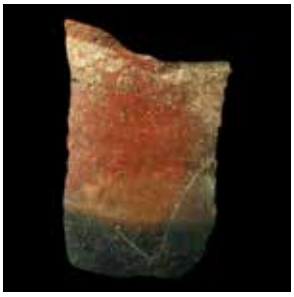
Sign_17.8_KNM-G-0065


Sign_17.9_PBI-G-0488

Sign_17.10_KDL_TU-PU-G-0508

Sign_17.11_TKP_G_3916

Sign_17.12_KML-TNS-DA_0332


Sign_17.13_MGD_G_0141

Sign_17.14_AGM_G_0188

Sign_17.15_TKP_G-0814

Sign_17.16_KRR_G_0076

Sign No.17-Composites

Plate 5.73

Sign_17.1C_KML_1239

Sign_17.2C_AGM_0014

Sign_17.3_TKP_0449

Sign_17.4_KLD_0670

Sign_17.5C_AGM-G-0006

Sign_17.6_TKP_2418

Sign_17.7C_KLD_ASI_G_0241

Sign_17.8_TKP_3718

Sign_17.9_AGM_0214

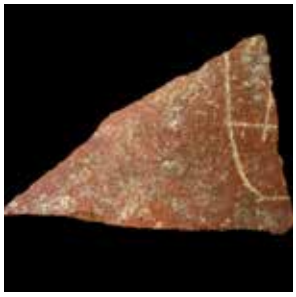
Sign_17.10C_KLD-TNS-DA_G_0648

Sign_17.11_KLD_0617

Sign_17.12_TKP_3024

Sign_17.13_KDL_0381

Sign_17.14_KLD-TNS-DA_0009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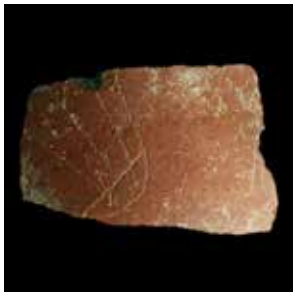

Sign_17.16_MGD_0024

Sign_17.17_TKP_2805

Sign_17.18C_Puha-lur_G_0001

Sign_17.19_TKP_2993

Sign_17.20_TKP_0932

Sign No.17-Composites

Plate 5.74

Sign_17.21_TKP_2596

Sign_17.22_ARM_0010

Sign_17.23_KML_0423

Sign_17.24C_TKP_G_4723

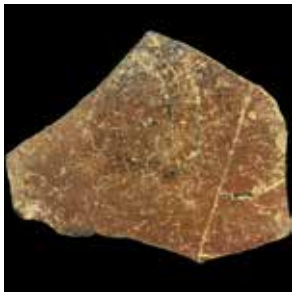
Sign_17.25_KCM_0011

Sign_17.26_TKP_2567

Sign_17.27C_PSG_Museum_0005

Sign_17.28C_PSG_Museum_0003

Sign_17.29C_PSG_Museum_0006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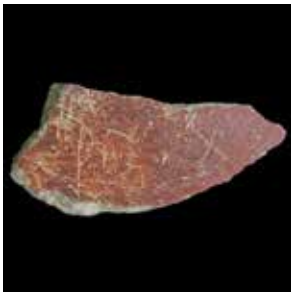
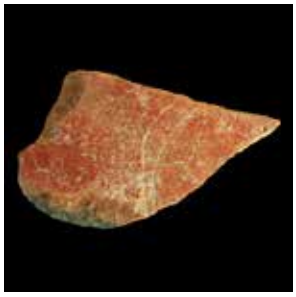
SIgn_17.31C_TKP_G_3905

Sign_17.32_KML_0193


Sign_17.33_KLD_1249

Sign_17.34_KLD-TNS-DA_0014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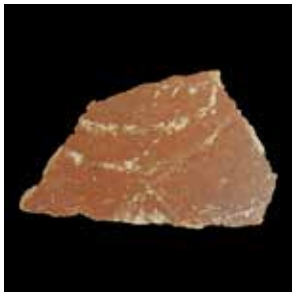
Sign_17.36_MGD_0026

Sign_17.37_KLD_0309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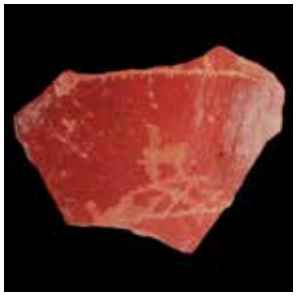
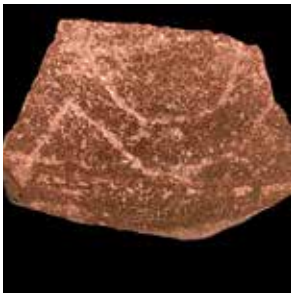

Sign_17.39_KLD-TNS-DA_0647

Sign_17.40_MGD_0037

Sign No.17-Composites

Plate 5.75



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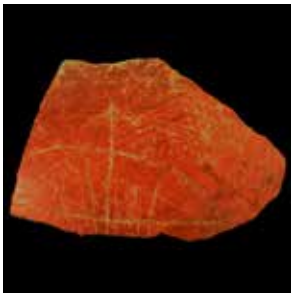
Sign No.18-Base & Variants

Plate 5.76

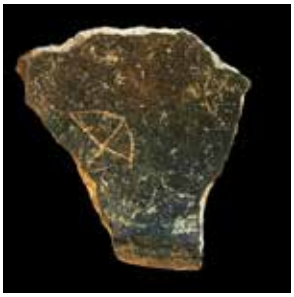


Sign_18.0_KDL_TU-PU-G-0056

Sign_18.1_KLD_TNS-DA-G-0881

Sign_18.2_KDL_TU-PU-G-0444

Sign_18.3_KDL_TU-PU-G-0444



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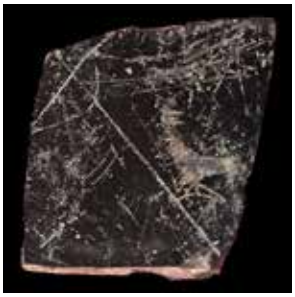
Sign_18.5_KDL_TU-PU-G-0058

Sign_18.6_KLD_ASI-G-0463



Sign_18.7_AGM_G_0274

Sign_18.8_KLD_ASI_G-0526

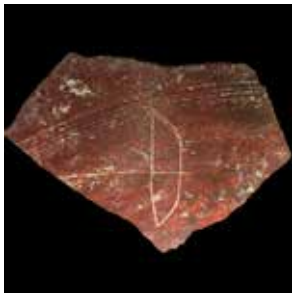
Sign_18.9_TKP_G-2378

Sign_18.10_KMD-G-0033

Sign No.18-Composites

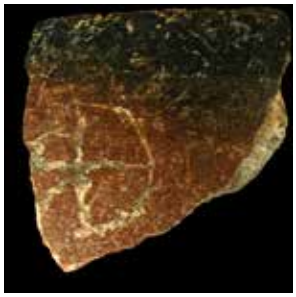
Plate 5.77

Sign_18.1_KML_1198



Sign_18.2_PRR_0342

Sign_18.3_TKP_1123



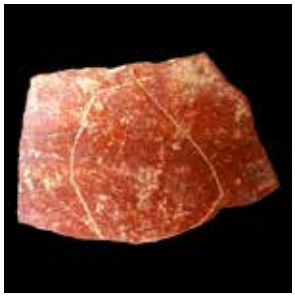
Sign_18.4_KML_1174

Sign_18.5_TKP_1212

Sign No.19-Base & Variants

Plate 5.78

Sign_19.0_KLD_TNS-DA-G-0574

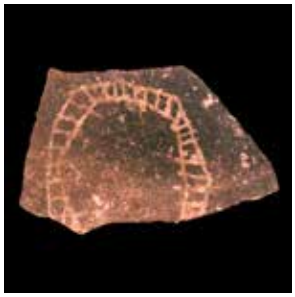


Sign_19.1_KDL-TU-PU_G_0354

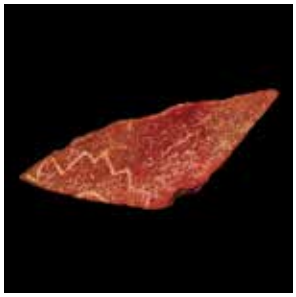
Sign_19.2_KRK-G-0164

Sign_19.3_MGD-G-0152

Sign_19.4_KLD_TNS-DA-G-0551



Sign_19.5_TKP_G-1169



Sign_19.6_KLD_ASI_G_0394

Sign No.19-Composites

Plate 5.79

Sign_19.1_KLD_0745

Sign_19.2_KML_0241

Sign_19.3_KLD_0611

Sign_19.4_MGD_0047

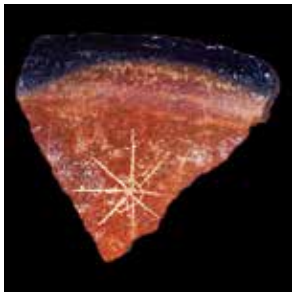
Sign_19.5_TKP_0887

Sign_19.6_KLD_0330

Sign_19.7_KRR_G_0041

Sign_19.8_KLD_1197

Sign_19.9_KML_0113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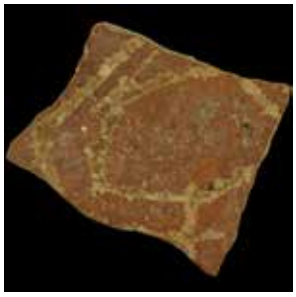
Sign_19.11_KLD_0163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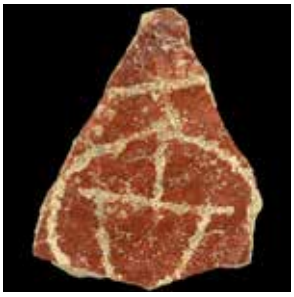
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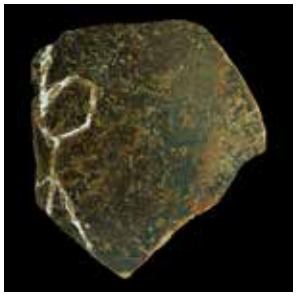
Sign_19.14C_AGM_010

Sign_19.15_TKP_1100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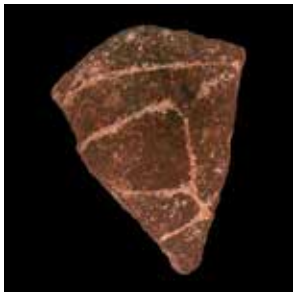
Sign_19.17_KMD_0051_KMD

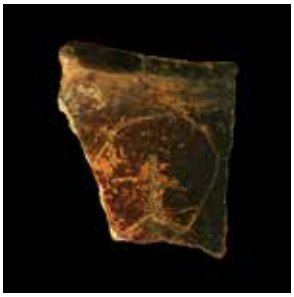
Sign_19.18_KLD_0465

Sign_19.19_KLD_0577


Sign_19.20_TKP_1189

Sign No.19-Composites

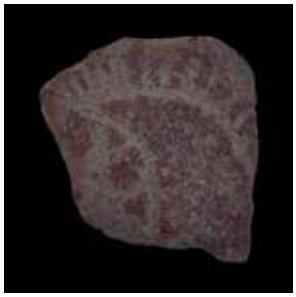
Plate 5.80



Sign_19.21_KML_1068

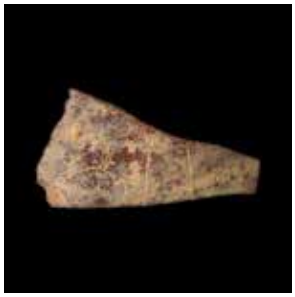
Sign_19.22_TKP_2514

Sign_19.23_KNM_0287



Sign_19.24_TKP_2385

Sign_19.25_KRK_0101

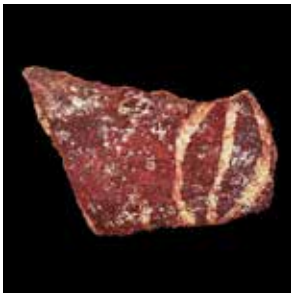


Sign_19.26C_Tamaraiku-lam_0001

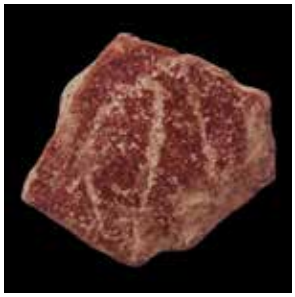
Sign_19.27_KLD_0558

Sign No.20-Base & Variants

Plate 5.81



Sign_20.0_TKP_G-4462



Sign_20.1_KRK-G-0050

Sign_20.2_KDL_TNS-DA-G-0385

Sign_20.3_KDL_TU-PU-G-0480

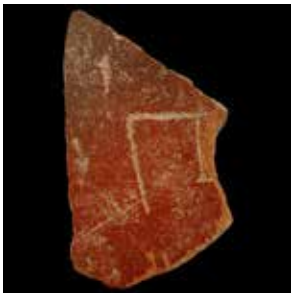
Sign_20.4_KDL_TU-PU-G-0278

Sign_20.5_KLD_TNS-DA_G_0539

Sign_20.6_MGD-G-0041

Sign No.21-Base & Variants

Plate 5.82


Sign_21.0_V-AGM-G-0076

Sign_21.1_KRR-G-0178

Sign_21.2_AGM-G-0278

Sign_21.3_KLD_TNS-DA-G-0684

Sign_21.4_TKP_G_0606

Sign_21.5_AGM_G_0319

Sign_21.6_KDL_TU-PU-G-0462

Sign_21.7_AGM_G_0320

Sign_21.8_KML_G_1236

Sign_21.9_TKP-G-1219

Sign_21.10_TKP-G-1204

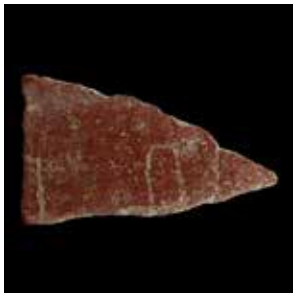
Sign_21.11_PRR-G-0441

Sign No.21-Composites

Plate 5.83

Sign_21.1_KRR_0095

Sign_21.2_ADC_0319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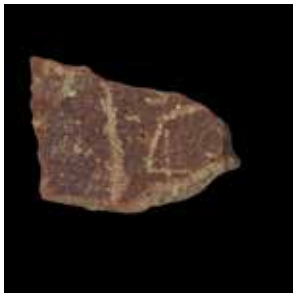
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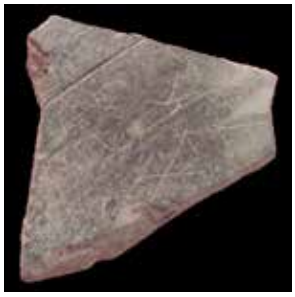
Sign_21.5_KDL_0423

Sign_21.6_KLD_0861

Sign_21.7C_AGM_G_0009

Sign_21.8C_PRR_G_0389

Sign_21.9_V-AGM_0074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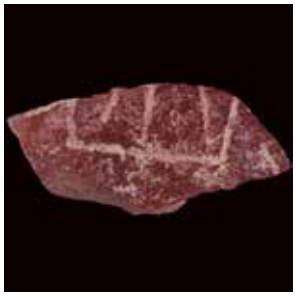
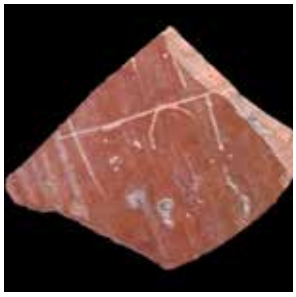

Sign_21.11_KRK_0157

Sign_21.12_KRR_0011

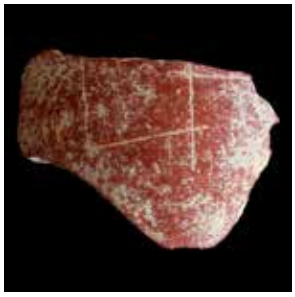
Sign_21.13_TKP_0681

Sign_21.14_KNM_0286

Sign_21.15_V-AGM_0105


Sign_21.16_AGM_0229

Sign_21.17_AGM_0360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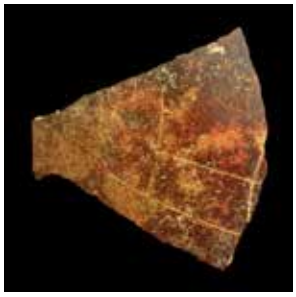
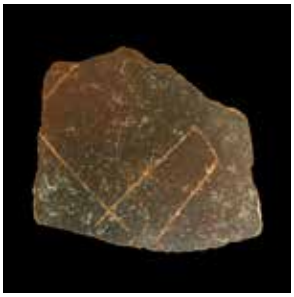
Sign_21.19C_KLD_TNS-DA_G_1191


Sign_21.20_KML_0710

Sign No.21-Composites

Plate 5.84

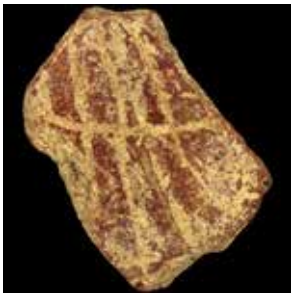
Sign_21.21_KLD_0901


Sign_21.22_KML_0308

Sign_21.23_KLD_0653

Sign_21.24_KLD_0658

Sign_21.25_NDR_0037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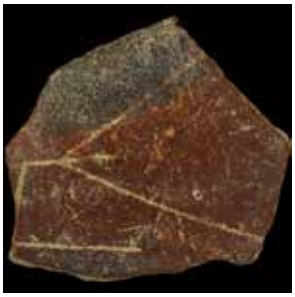
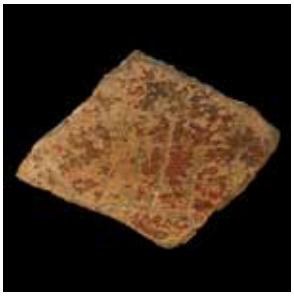
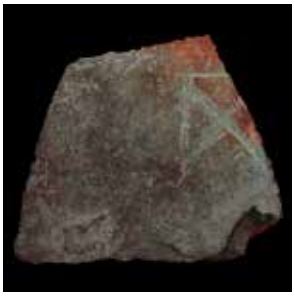
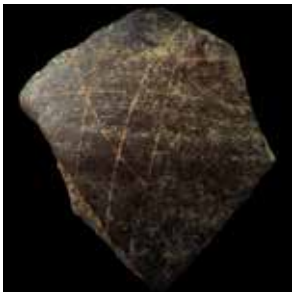

Sign_21.27_TKP_0720

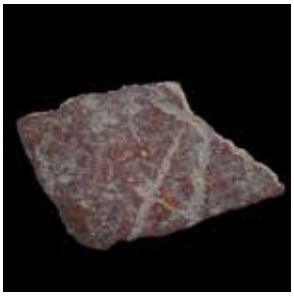
Sign_21.28_PRR_0346

Sign_21.29_TKP_0978


Sign_21.30_KML_0089


Sign_21.31C_AGM_G_0318


Sign_21.32_PRR_0282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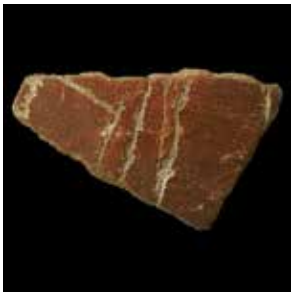
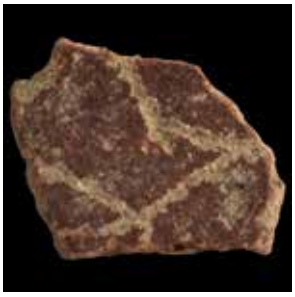

Sign_21.34C_KRR_G_0198

Sign_21.35_TKP_2605


Sign_21.36C_TKP_G_3594

Sign_21.37_TKP_2646

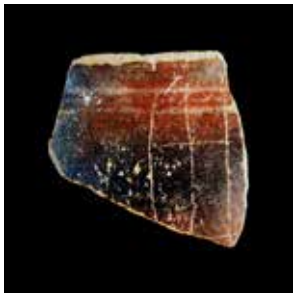
Sign_21.38_AGM_0085

Sign No.22-Base & Variants

Plate 5.85

Sign_22.0_KDL_TU-PU-G-0434

Sign_22.1_KDL_TU-PU-G-0107

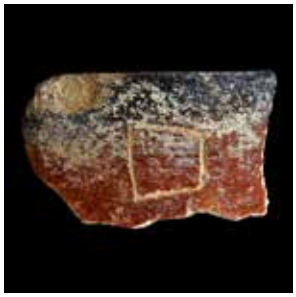

Sign_22.2_KDL_TU-PU-G-0535

Sign_22.3_KNM-G-0041

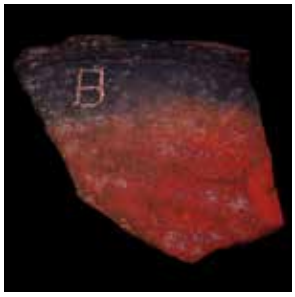
Sign_22.4_KLD_ASI-G-0253

Sign_22.5_AGM-G-0219

Sign_22.6_KLD_ASI_G_0399

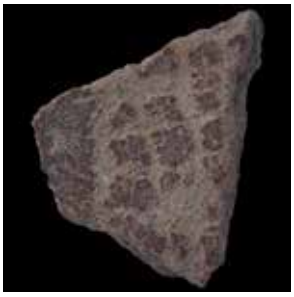

Sign_22.7_KDL_TU-PU-G-0347

Sign_22.8_KRR_G-0022


Sign_22.9_ARM-G-0014

Sign_22.10_AGM-G-0159

Sign_22.11_KTM-G-0007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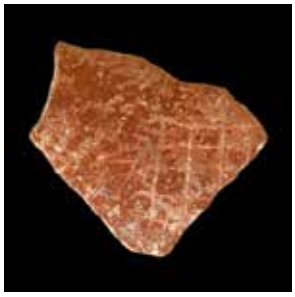

Sign_22.13_KNM_G-0038

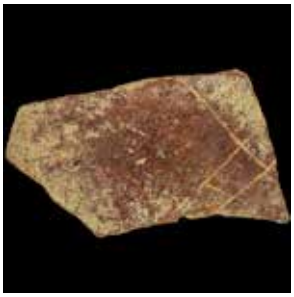
Sign_22.14_KRK-G-0140

Sign_22.15_KLD_TNS-DA-G-0663

Sign_22.16_KLD_TNS-DA-G-0896

Sign No.22-Composites

Plate 5.86

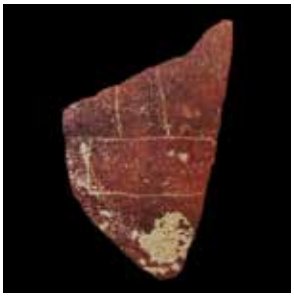

Sign_22.1_TKP_0939

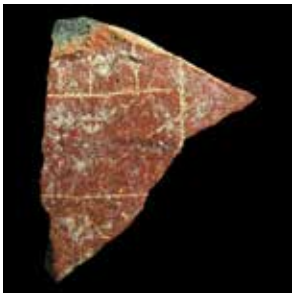
Sign_22.2_TKP_0594

Sign_22.3_ADC_0738

Sign_22.4_KLD_0499

Sign_22.5_TKP_1017


Sign_22.6C_KRK_G_0041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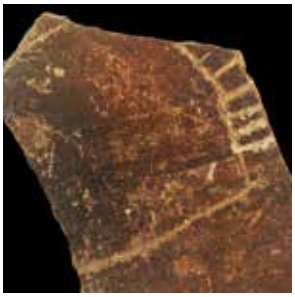
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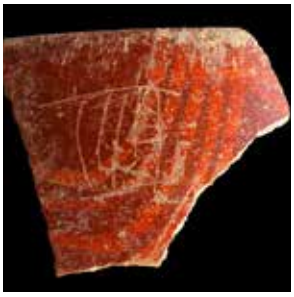
Sign_22.9_KLD-TNS-DA_0659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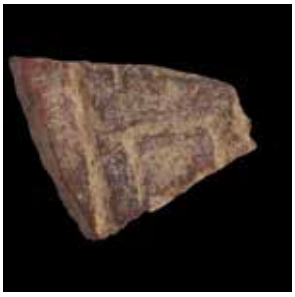
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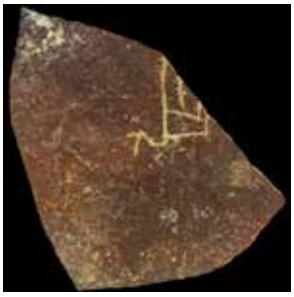
Sign_22.12_KLD_TNS-DA_0628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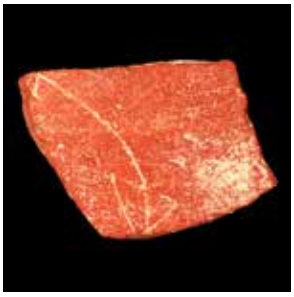
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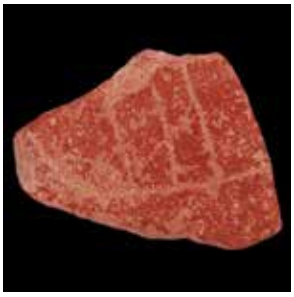
Sign_22.15_AGM_0235

Sign_22.16_KDL_0420

Sign_22.17_KLD_718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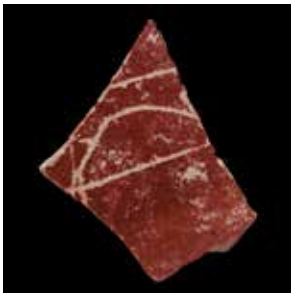
Sign_22.19_TKP_0879

Sign_22.20_KNM_0264

Sign No.22-Composites

Plate 5.87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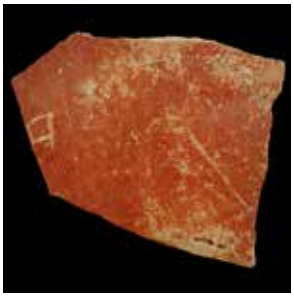
Sign_22.22_MGM_0008

Sign_22.23_KLD_0761

Sign_22.24_ADC_0051

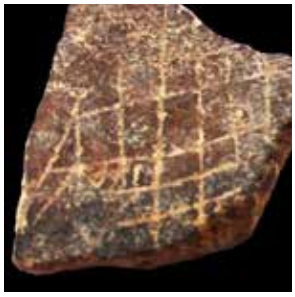

Sign_22.25_V-AG_0048

Sign_22.26_AGM_0164

Sign_22.27_TKP_0800

Sign_22.28_TKP_0468

Sign_22.29_TIV_0202


Sign_22.30_PRR_0347

Sign_22.31_KDL_0361

Sign_22.32_ARM_0005

Sign_22.33_KLD_0988

Sign_22.34_AGM_0272

Sign_22.35_AGM_0073

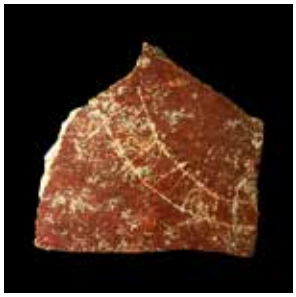
Sign No.23-Base & Variants

Plate 5.88

Sign_23.0_KRR-G-0067

Sign_23.1_KLD_TNS-DA-G-0100

Sign_23.2_KRK-G-0027



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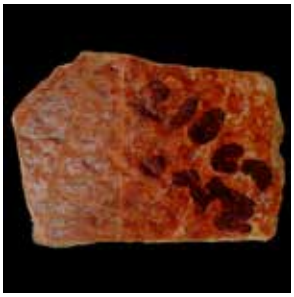
Sign_23.4_ADC_G_0815

Sign No.23-Composites

Plate 5.89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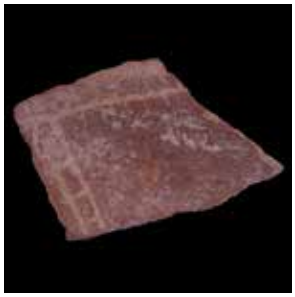
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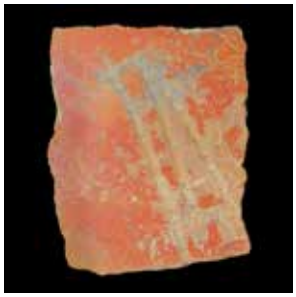

Sign_23.3_KLD_0921

Sign_23.4_PBI_0117

Sign_23.5_NDR_0077

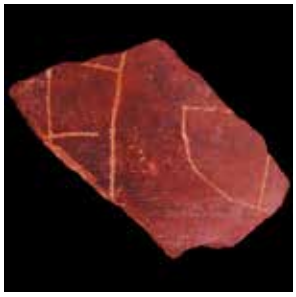
Sign_23.6_NDR_0069

Sign_23.7_KLD_0019

Sign_23.8_KML_1298

Sign_23.9_TKP_2982

Sign_23.10_KLD_ASI_0255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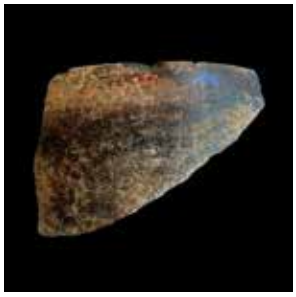
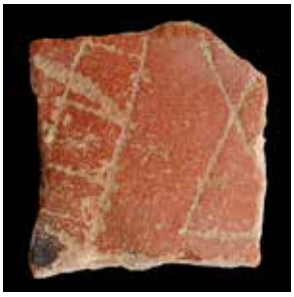
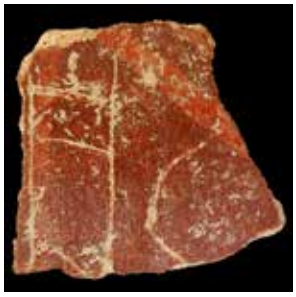

Sign_23.12_KDL_0221

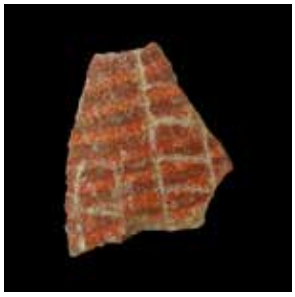

Sign_23.13_KDL-U-PU_0321

Sign_23.14_KLD_0341

Sign_23.15_TKP_3665


Sign_23.16_NDR_0011

Sign_23.17_KDL_0053

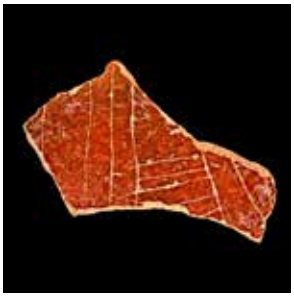

Sign_23.18_KML_1011

Sign_23.19_KLD_ASI-G-0772

Sign_23.20_TKP_2375

Sign No.23-Composites

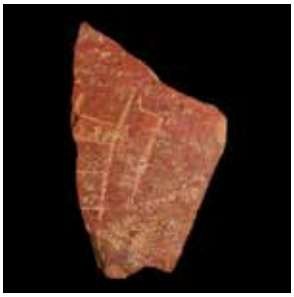
Plate 5.90


Sign_23.21_PBI_0006

Sign_23.22_KLD-TNS-DA_0001

Sign_23.23_KRR_0076

Sign_23.24_KDL_TU-PU-G-0282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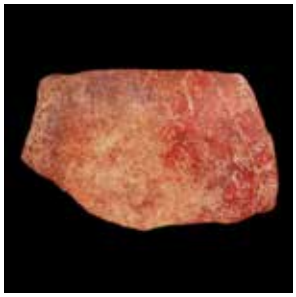
Sign_23.26_KDL_0326

Sign_23.27_KLD_0082


Sign_23.28_KLD_0339

Sign_23.29_KLD-TNS-DA_0011

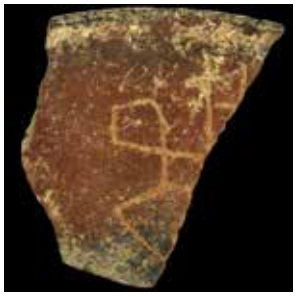
Sign_23.30_KLD-TNS-DA_0016

Sign_23.31_MGD_0040

Sign_23.32_KLD_0483

Sign_23.33_KLD_0749

Sign_23.34_KLD_0780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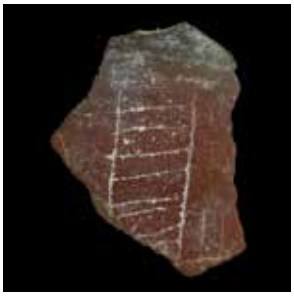
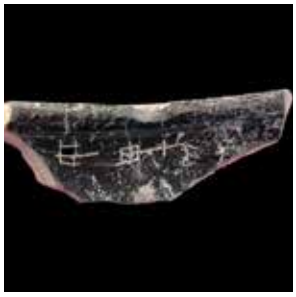
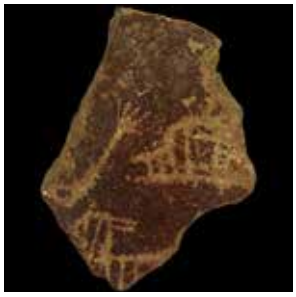
Sign_23.36_ARM-G-0005


Sign_23.37_KML_1206

Sign_23.38_KLD_0127


Sign_23.39_AGM_0272


Sign_23.40_TKP_0591

Sign No.24-Base & Variants

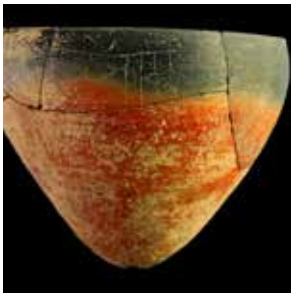
Plate 5.91

Sign_24.0_KDL_TNS-DA-G-0149

Sign_24.1_KDL_TU-PU-G-0034

Sign_24.2_TKP_G-4340

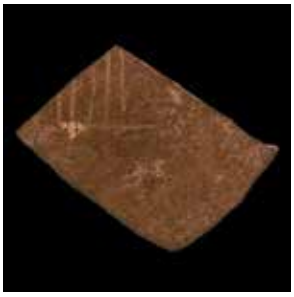
Sign_24.3_TKP_G-0030


Sign_24.4_KMD-G-0009

Sign_24.5_SGI(VPT)_0044

Sign_24.6_AGM-G-0173

Sign_24.7_KLD_TNS-DA-G-0657


Sign_24.8_TKP_G-1096

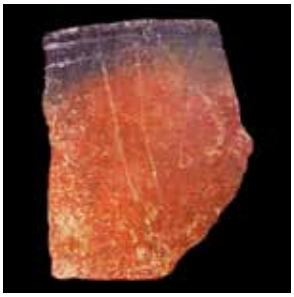
Sign_24.9_AGM-G-0204

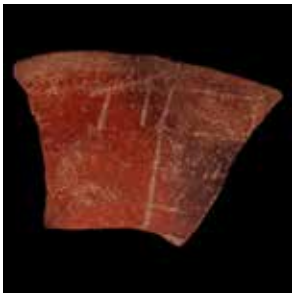
Sign_24.10_TKP_G-1164

Sign No.24-Composites

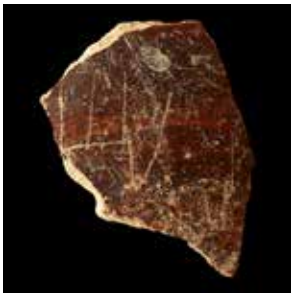
Plate 5.92

Sign_24.1_KML_0170

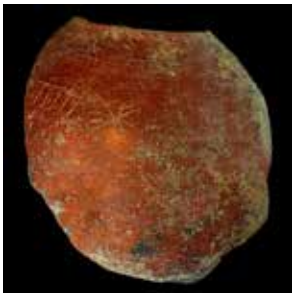

Sign_24.2_KLD_0007

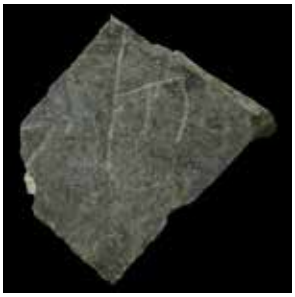

Sign_24.3_KRK_0037

Sign_24.4_PMR_0037

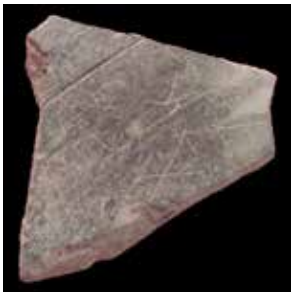

Sign_24.5_KDL_TU-PU-G-0506

Sign_24.6_KLD_0479

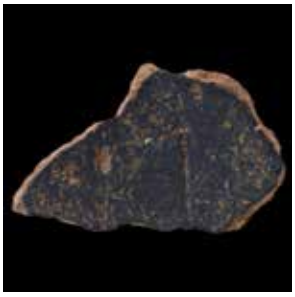

Sign_24.7_KDL_TU-PU-G-0050


Sign_24.8_AGM_0060

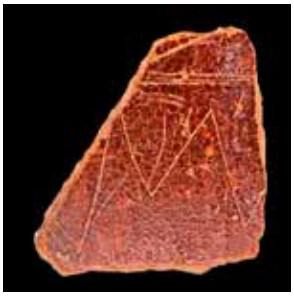
Sign_24.9_NDR_0037

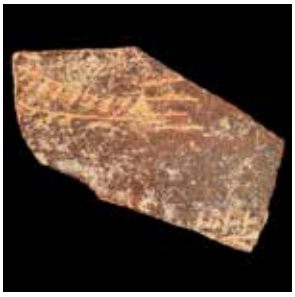

Sign_24.10_AGM_0313

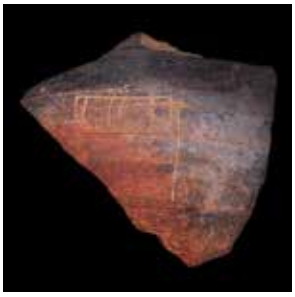
Sign_24.11_KML_0161


Sign_24.12_ADC_0791

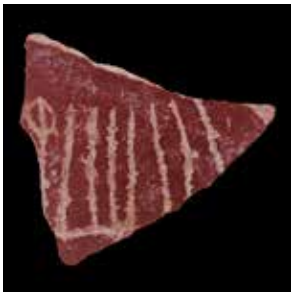
Sign_24.13_TKP_1187


Sign_24.14_PBI_0394


Sign_24.15_ADC_0042


Sign_24.16_KTM_0008

Sign_24.17_TKP_1173


Sign_24.18_KRK_0053

Sign_24.19_NDR_0037

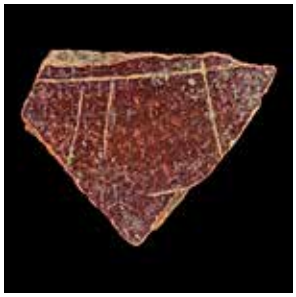
Sign_24.20_TKP_2680

Sign No.25-Base & Variants

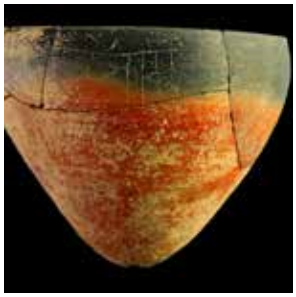
Plate 5.93

Sign_25.0_KDL_TU-PU-G-0464

Sign_25.1_TKP-G-4013



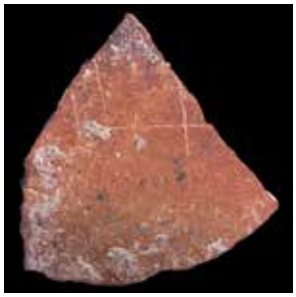
Sign_25.2_PBI-G-0331



Sign_25.3_KMD-G-0009

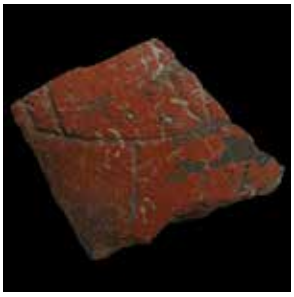
Sign_25.4_TIV-G-0068

Sign_25.5_KDL_TU-PU-G-0026



Sign_25.6_KLD_TNS-DA-G-0057

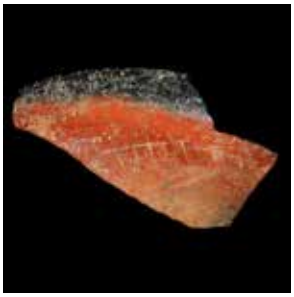
Sign_25.7_TKP-G-4700



Sign_25.8_TIV-G-0199

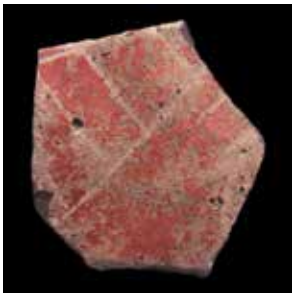
Sign No.25-Composites

Plate 5.94


Sign_25.1_KLD_ASI-G-0065

Sign_25.2_KDL_0303

Sign_25.3_KDL_0218

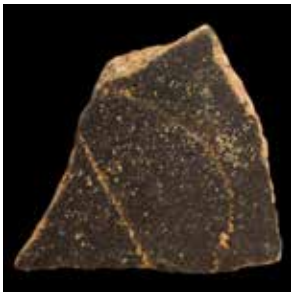

Sign_25.4_KLD-TNS-DA_0080

Sign_25.5_ADC_0898

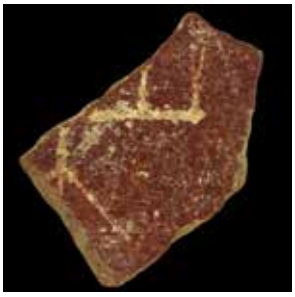
Sign_25.6_TKP_775

Sign_25.7_KLD-TNS-DA_0051

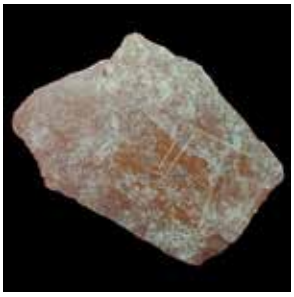
Sign_25.8_KLD_0089


Sign_25.9_ADC_0842

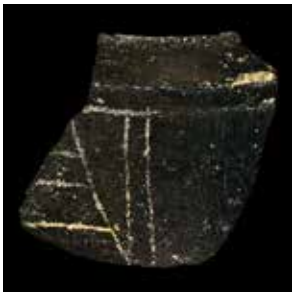
Sign_25.10_KLD-TNS-DA_0005


Sign_25.11_TKP_0926

Sign_25.12_ADC_0695


Sign_25.13_AGM_0363

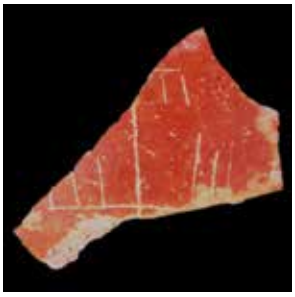
Sign_25.14_KLD_0569


Sign_25.15_KLD_0788

Sign_25.16_KLD_0338

Sign_25.17_KLD_0130

Sign_25.18_KLD_TNS-DA-G-0989


Sign_25.19_KLD_TNS-DA-G-0633

Sign_25.20_KLD-TNS-DA_0591

Sign No.25-Composites

Plate 5.95

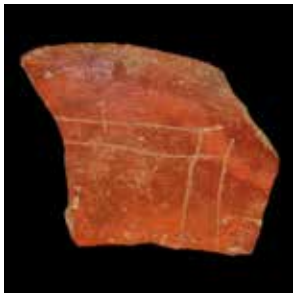
Sign_25.21_KNM_0217

Sign No.26-Base & Variants

Plate 5.96

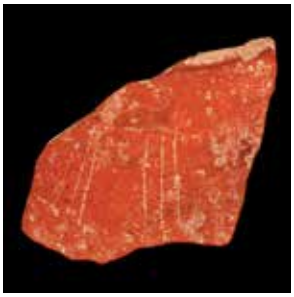
Sign_26.0_KLD_ ASI-G-0655

Sign_26.1_KLD_TNS-DA-G-0573



sign_26.2_KLD_ASI-G-0141

Sign_26.3_KLD_TNS-DA-G-1302



Sign_26.4_KLD_ ASI-G-0507

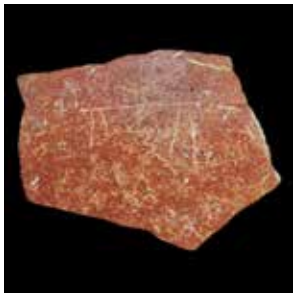
Sign_26.5_KDL-G-0500

Sign No.26-Composites

Plate 5.97

Sign_26.1_KDL_0507

Sign_26.2C_KLD_ASI-G-0362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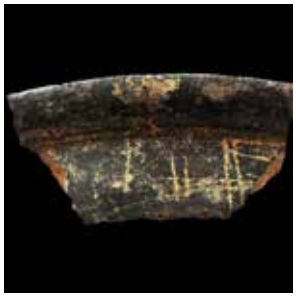
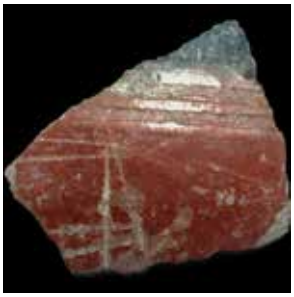

Sign_26.4_PPR_0529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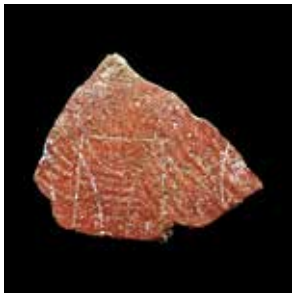
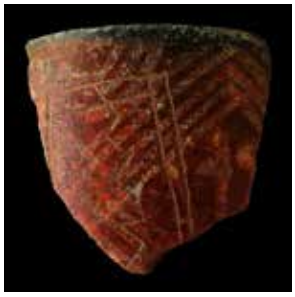

Sign_26.6_KDL_TU-PU-G-0536

Sign_26.7_KML_1270

Sign_26.8_TKP_0204

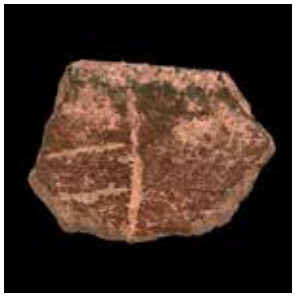
Sign_26.9_North Arcot_0001


Sign_26.10_KDL_TU-PU-G-0064

Sign No.27-Base & Variants

Plate 5.98

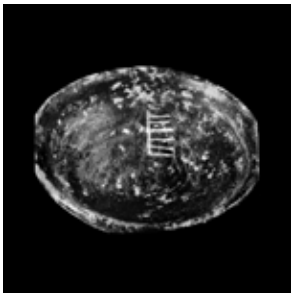
Sign_27.0_TKP-G-0576



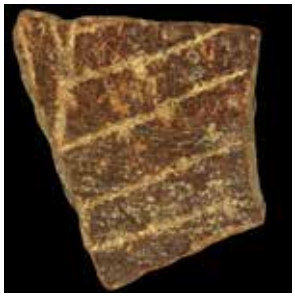
Sign_27.1_TKP_G-1125

Sign_27.2_KLD_ ASI-G-0657

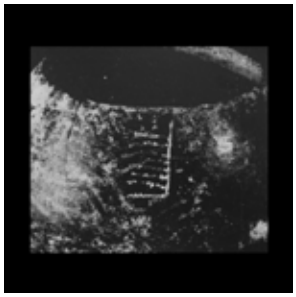
Sign_27.3_TKP-G-0526



Sign_27.4_Coim-batore-G-0005



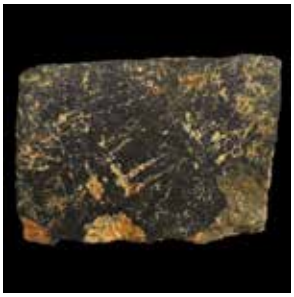
Sign_27.5_TKP-G-0724



Sign_27.6_North Ar-cot-G-0005

Sign No.27-Composites

Plate 5.99



Sign_27.1_ADC_0662

Sign_27.2_TKP_3070

Sign No.28-Base & Variants

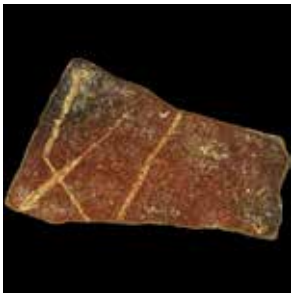
Plate 5.100

Sign_28.0_AGM-G0052

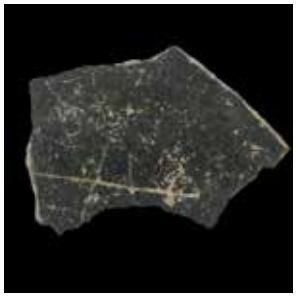
Sign_28.1_V-AGM-G-0070

Sign_28.2_AGM-0024

Sign_28.3_KDL_TNS-DA-G-1256


Sign_28.4_TKP-G-0710

Sign_28.5_AGM-0144


Sign_28.6_KML-0772

Sign_28.7_KLD-TNS-DA-0772

Sign_28.8_KDL-0034

Sign_28.9_KML-0377

Sign_28.10_TKP-0764

Sign_28.11_TKP-0938

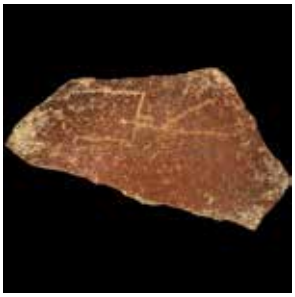
Sign_28.12_TKP-1159

Sign No.28-Composites

Plate 5.101

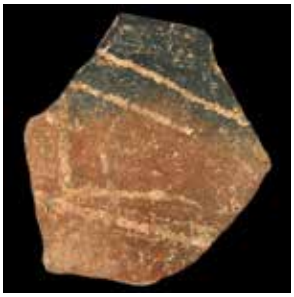
Sign_28.1_KRR_0080

Sign_28.2_TKP_2620


Sign_28.3_TKP_0851

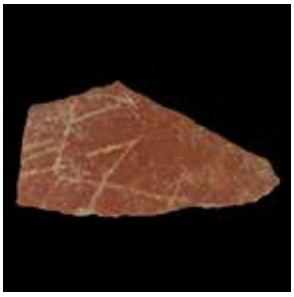
Sign_28.4_KLD_0524

Sign_28.5_KML_1297

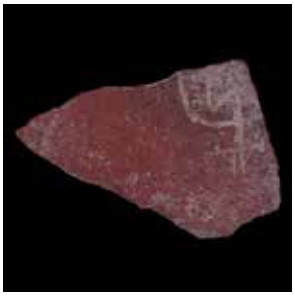

Sign_28.6_ADC_0050

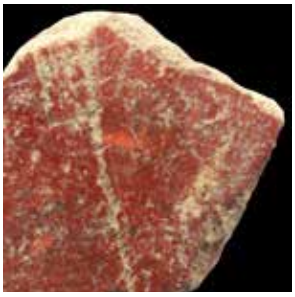
Sign_28.7_KML_1278

Sign_28.8_AGM_0338


Sign_28.9_KML_1110

Sign_28.10_TKP_0513


Sign_28.11_TKP_2370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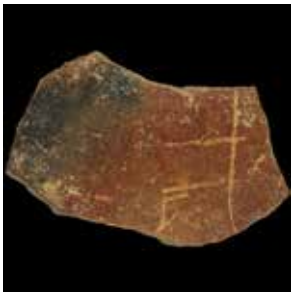
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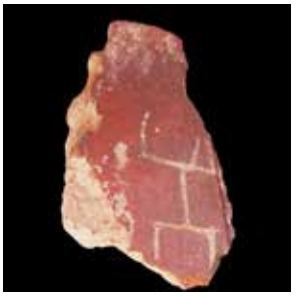
Sign_28.15_KCM_0010

Sign_28.16_KLD-ASI_0671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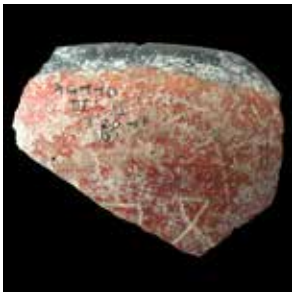
Sign_28.18_KLD_0673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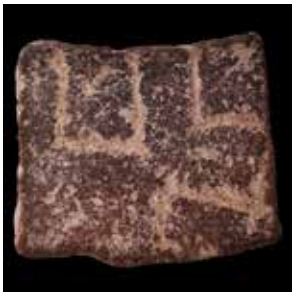
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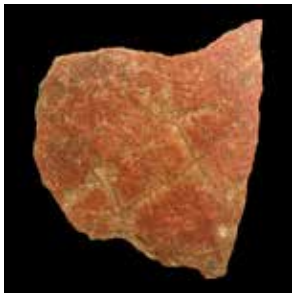
Sign No.28-Composites

Plate 5.102

Sign_28.21_MGD_0108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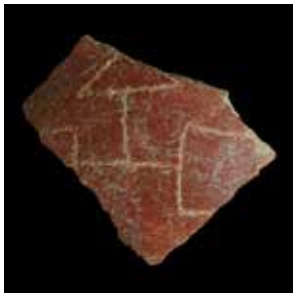
Sign_28.23_KLD-ASI_0393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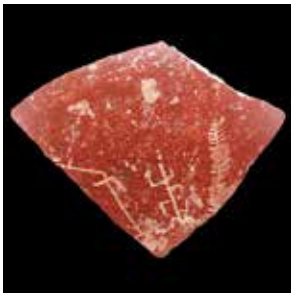
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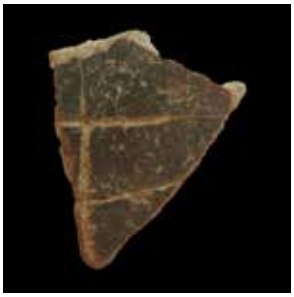
Sign_28.26_KLD_0036

Sign No.29-Base & Variants

Plate 5.103

Sign_29.0_KML_TNS-DA-G-0401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Sign_29.2_KNM-G-0078

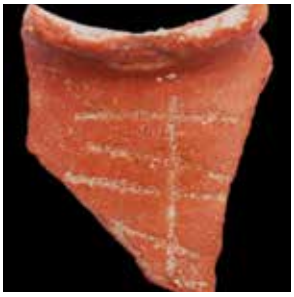
Sign_29.3_KTM-G-0017

Sign_29.4_KNM-G-0082

Sign_29.5_KMD-G-0102

Sign_29.6_ARM-G-0011

Sign_29.7_KNM-G-0051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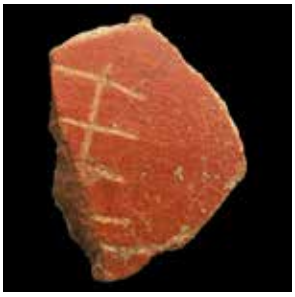
Sign_29.9_TIV-G-0183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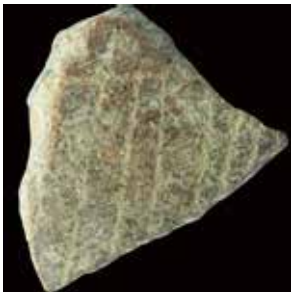
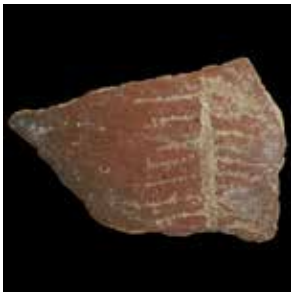

Sign_29.12_TKP-G-0108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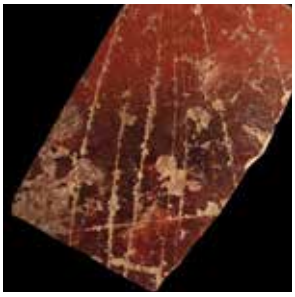
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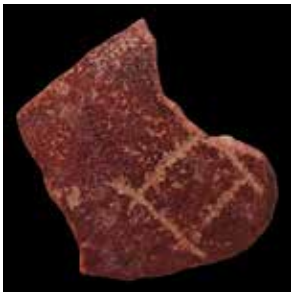
Sign_29.15_KNM-G-0107

Sign_29.16_PBI-G-G-0178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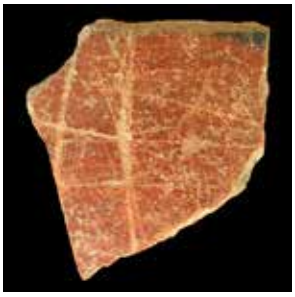
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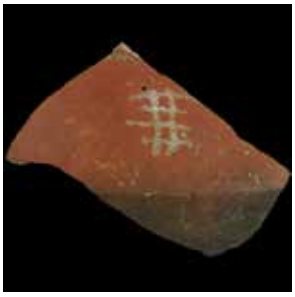
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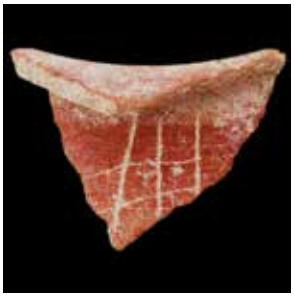
Sign No.29-Base & Variants

Plate 5.104



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Sign_29.21_KRR-G-0061

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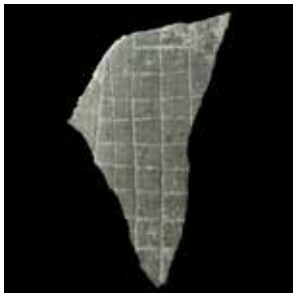

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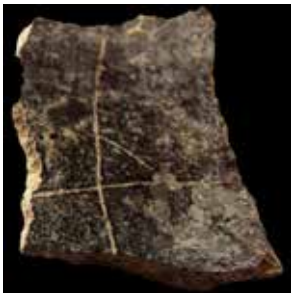
Sign_29.24_VLS-G-0004

Sign No.29-Composites

Plate 5.105


Sign_29.1_PPR_0186

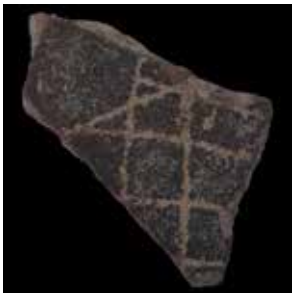
Sign_29.2_KLD_0834

Sign_29.3_KLD_0589

Sign_29.4_TIV_0037

Sign_29.5_KRK_0039

Sign_29.6_MGD_0099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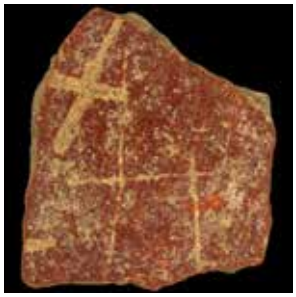
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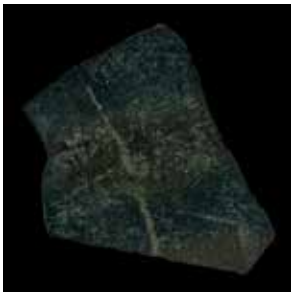
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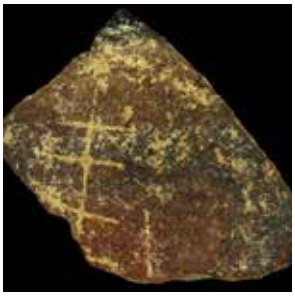
Sign_29.10_TKP_0321

Sign_29.11_TKP_0259

Sign_29.12_TKP_3835

Sign_29.13_PRR_0028

Sign_29.14_KML_0453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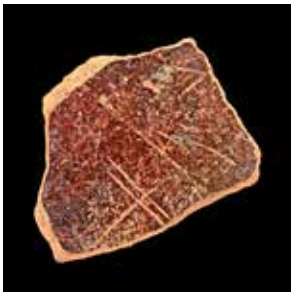
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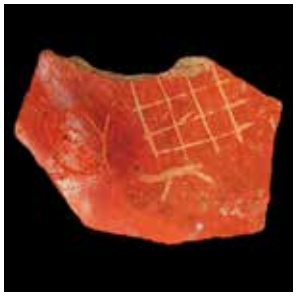
Sign_29.18_TKP_1062

Sign_29.19_KNM_0293


Sign_29.20_KLD_0445

Sign No.29-Composites

Plate 5.106

Sign_29.21_PRR_0380

Sign_29.22_AGM_0054

Sign No.30-Base & Variants

Plate 5.107

Sign_30.0_V-AGM-G-0289

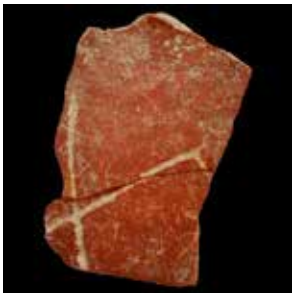
Sign_30.1_KLD_ ASI-G-0095

Sign_30.2_KLD_TNS-DA-G-0093

Sign_30.3_KDL_TU-PU-G-0231

Sign_30.4_TKP-G-3679

Sign_30.5_TKP-G-1099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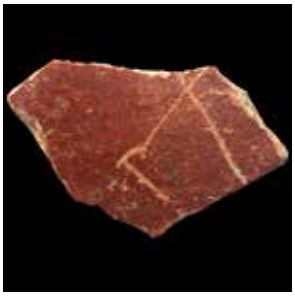
Sign_30.7_V-AGM-G-0217

Sign_30.8_TKP-G-4042

Sign_30.9_TKP-G-0366

Sign_30.10_MGM-G-0005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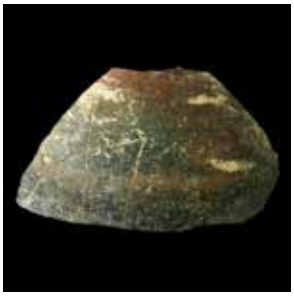
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Sign_30.13_TKP-G-0152

Sign_30.14_KNM-G-0250

Sign_30.15_TIV-G-0066

Sign_30.16_TKP-G-0968

Sign_30.17_PKM-G-0001

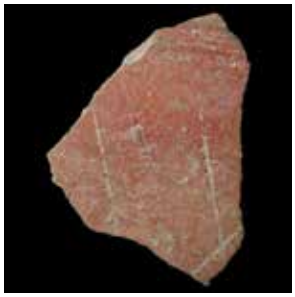
Sign_30.18_MGD-G-0031

Sign_30.19_MCR-G-0002

Sign No.30-Composites

Plate 5.108

Sign_30.1_AGM_0156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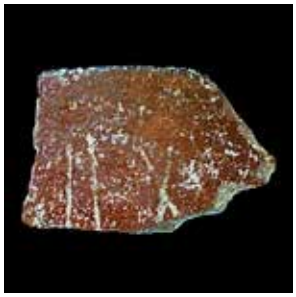
Sign_30.3_TKP_3373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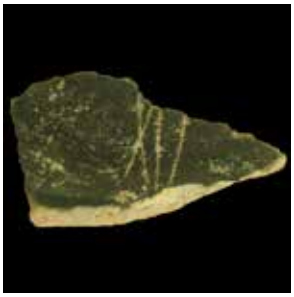
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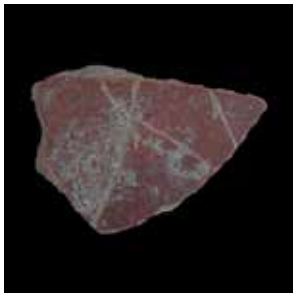
Sign_30.6_KDL_0483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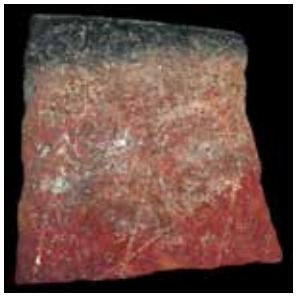
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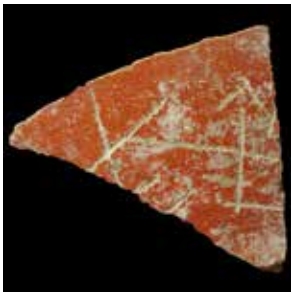
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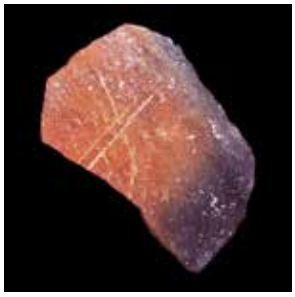
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Sign_30.12_KML_0543

Sign_30.13_PBI_0101

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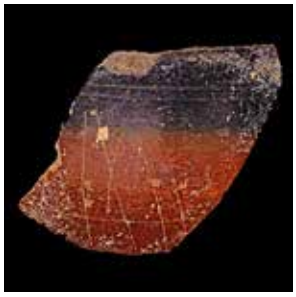
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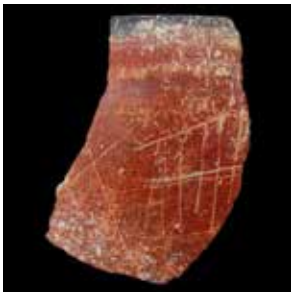
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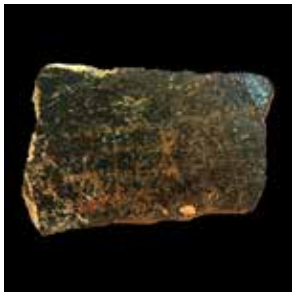
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Sign_30.19_TKP_2872

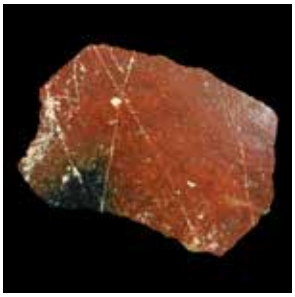
Sign_30.20_KLD-ASI_0342

Sign No.30-Composites

Plate 5.109

Sign_30.21_PRR_0395

Sign_30.22_AGM_114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Sign_30.24_ADC_0190

Sign_30.25_KML_0216

Sign_30.26_TKP_3095

Sign_30.27_KML_0011

Sign_30.28_ADC_0719

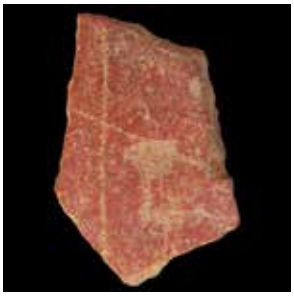
Sign_30.29_KLD-ASI_0346

Sign_30.30_PRR_0007

Sign_30.31_AGM_0236

Sign_30.32_AGM_0156

Sign_30.33_KDL_0311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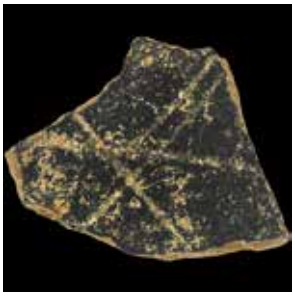
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Sign_30.37_ARM_0006

Sign_30.38_KML_0728

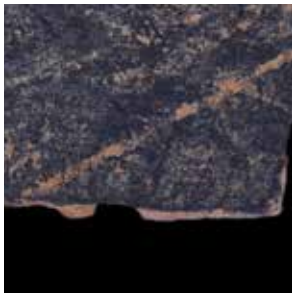
Sign_30.39_KML_0235

Sign_30.40_AGD_0125

Sign No.30-Composites

Plate 5.110

Sign_30.41_SGI(VPT)0029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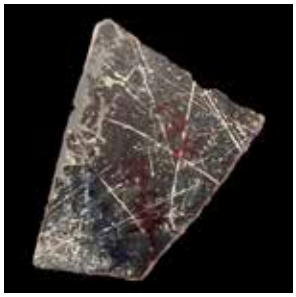
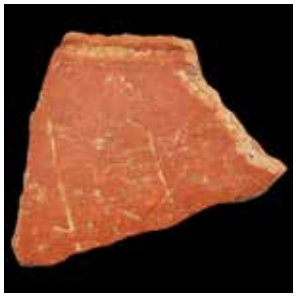

Sign_30.43_AGM_0335

Sign_30.44_KML_0344

Sign_30.45_TKP__0547

Sign_30.46_KLD-TNS-DA_0209

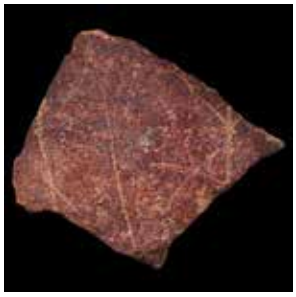

Sign_30.47_ADC_0159

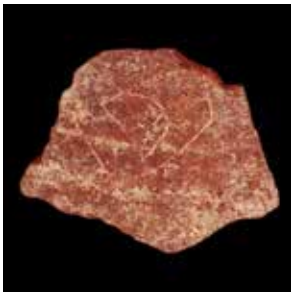
Sign_30.48_PRR_0142

Sign_30.49_KLD-TNS-DA_0045

Sign_30.50_TKP_3207

Sign_30.51_TIV_0109

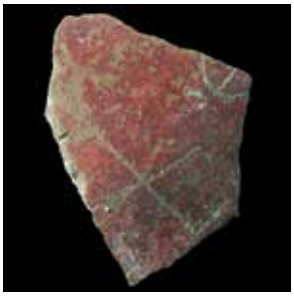

Sign_30.52_ADC_0258


Sign_30.53_KDL_0439

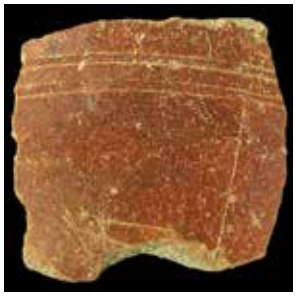
Sign_30.54_KDL_0348

Sign_30.55_SGI_0007

Sign_30.56_TKP_4257


Sign_30.57_AGM_0068

Sign_30.58_0784_ADC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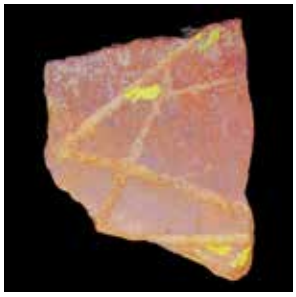
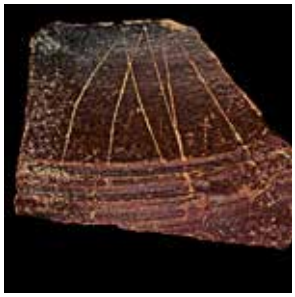
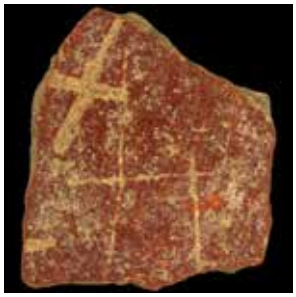

Sign_30.60_KLDT=-TNS-DA_0733

Sign No.30-Composites

Plate 5.111

Sign_30.61_ADC_0168


Sign_30.62_PBI_0721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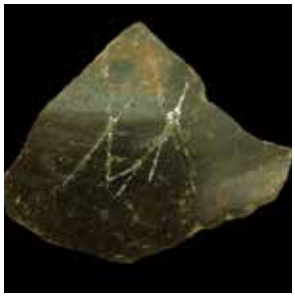
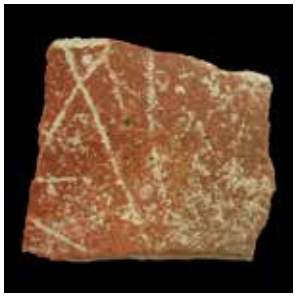
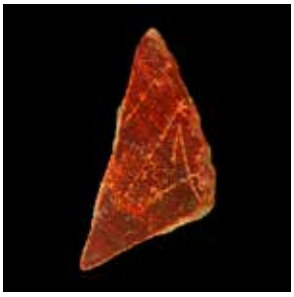
Sign_30.64_TIV_0021

Sign_30.65_KCM_0008


Sign_30.66_KML_1299


Sign_30.67_KML_1240

Sign_30.68_V-AGM_0003


Sign_30.69_KML_0656

Sign_30.70_SGI_0021

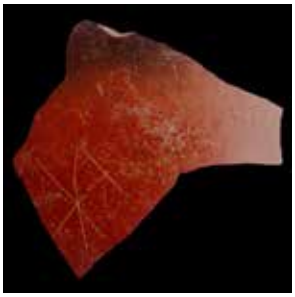
Sign No.31-Base & Variants

Plate 5.112

Sign_31.0_NDR-G-0078

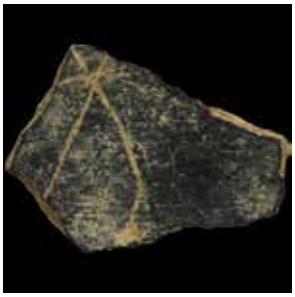
Sign_31.1_KLD_ ASI-G-0654

Sign_31.2_KDL_TU-PU-G-0529


Sign_31.3_SGI-G-0032

Sign_31.4_TIV-G-0014

Sign_31.5_KLD_ ASI-G-0281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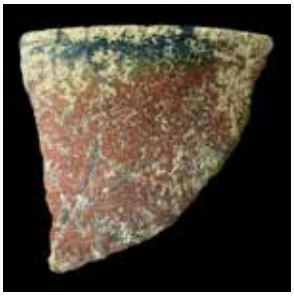
Sign_31.7_KRR-G-0056

Sign_31.8_SGI-G-0040


Sign_31.9_MGD-G-0145

Sign_31.10_KLD_ ASI-G-0555

Sign_31.11_KDL_TU-PU-G-0291

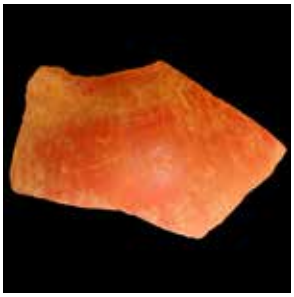
Sign_31.12_KDL_TU-PU-G-0269

Sign_31.13_KNM-G-0116

Sign_31.14_KRK-G-0048

Sign No.31-Composites

Plate 5.113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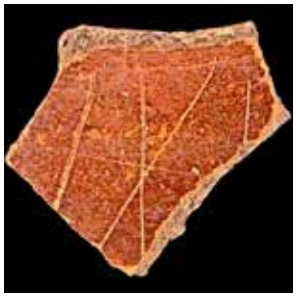
Sign_31.2_PMR_0022

Sign_31.3_ADC_0719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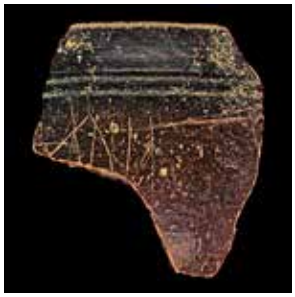
Sign_31.5_PRR_0199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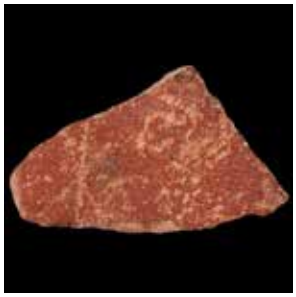
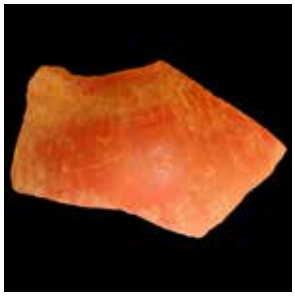
Sign_31.7_KLD-ASI_0008


Sign_31.8_ADC_0033

Sign_31.9_NDR_0014

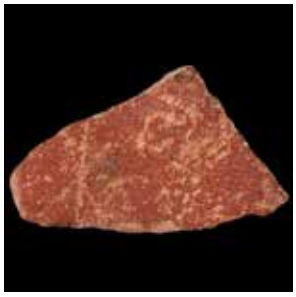

Sign_31.10_NDR_0053

Sign_31.11_KLD-TNS-DA_0012

Sign_31.12_TKP_3959

Sign_31.13_TKP_3610

Sign_31.14_PRR_0189


Sign_31.15_ADC_0033

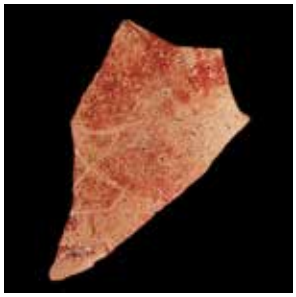
Sign No.32-Base & Variants

Plate 5.114

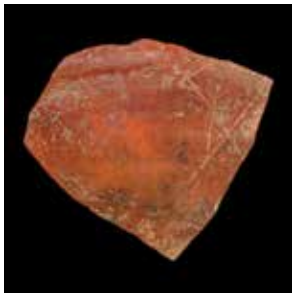
Sign_32.0_KNM-G-0108

Sign_32.1_NDR-G-0018

Sign_32.2_TKP-G-1059


Sign_32.3_KLD_ ASI-G-0421

Sign_32.4_KRK-G-0121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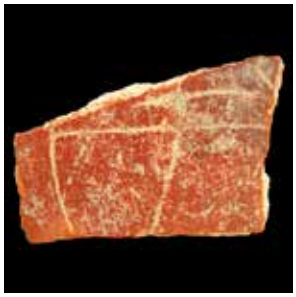
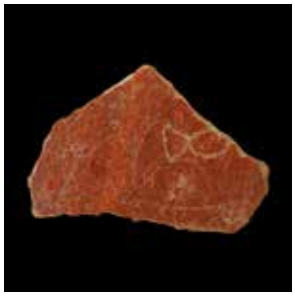

Sign_32.6_KML_TNS-DA-G-0027

Sign_32.7_KML_TNS-DA-G-0591

Sign_32.8_KML_TNS-DA-G-1204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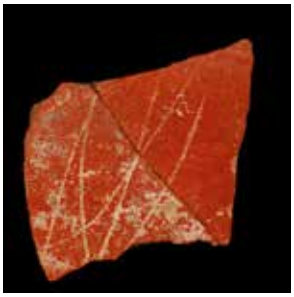
Sign_32.10_PKM-G-0020

Sign No.32-Composites

Plate 5.115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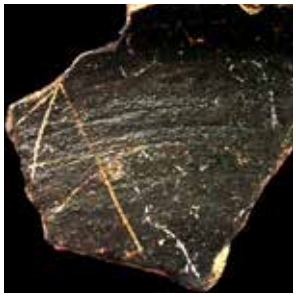
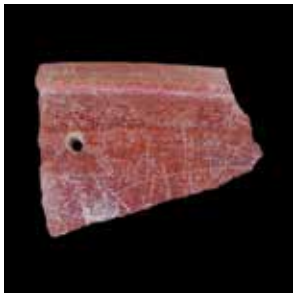
Sign_32.2_KLD-TNS-DA_0160


Sign_32.3_PRR_0033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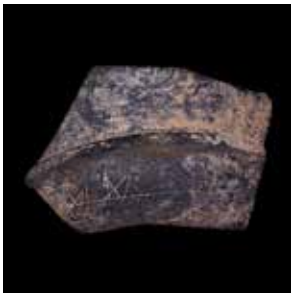
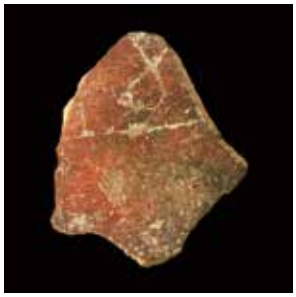
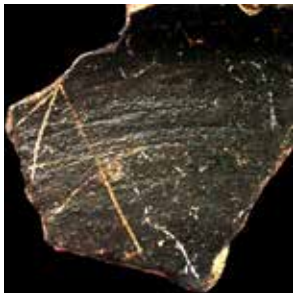

Sign_32.5_KTM_0013

Sign_32.6_KLD-ASI_0357


Sign_32.7_KML_0354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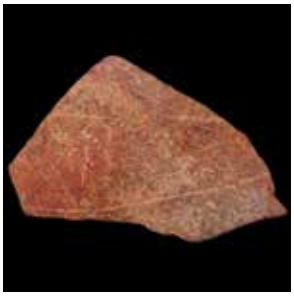
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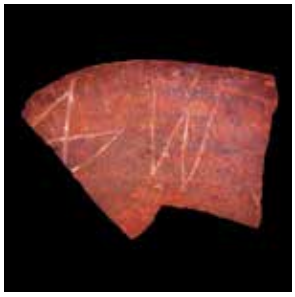
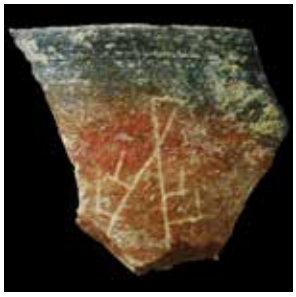
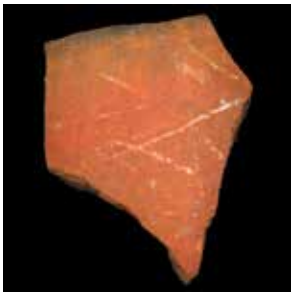

Sign_32.10_KTM_0027

Sign_32.11_APK_0004


Sign_32.12_TIV_0059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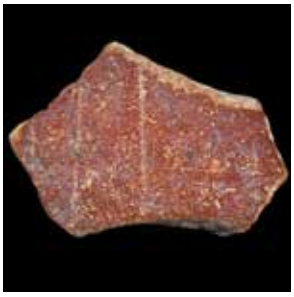
Sign_32.14_PKM_0002

Sign_32.15_PKM_0003

Sign_32.16_PKM_0007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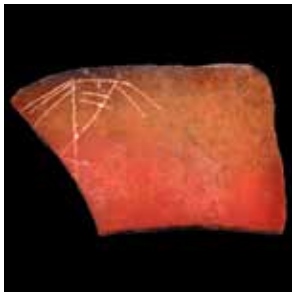
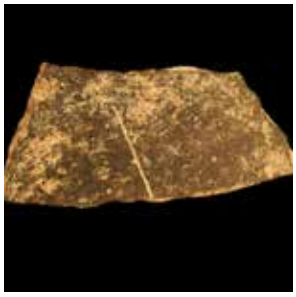

Sign_32.18_PKM_0015

Sign_32.19_ADC_0009


Sign_32.20_ADC_0080

Sign No.33-Base & Variants

Plate 5.116

Sign_33.0_KDL_TU-PU-G-0200

Sign_33.1_TKP-G-0988

Sign_33.2_KNM-G-0079

Sign_33.3_KNM-G-0076

Sign_33.4_KLD-ASI-G-0387

Sign_33.5_TIV-G-0061

Sign_33.6_TKP-G-1083

Sign_33.7_KRK-G-0420

Sign_33.8_PKM-G-0005

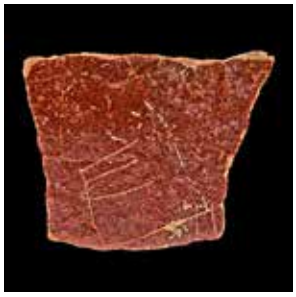
Sign_33.9_KDL_TNS-DA-G-0056

Sign_33.10_V-AGM-G-0063

Sign_33.11_KNM-G-0105

Sign_33.12_KNM-G-0060

Sign_33.13_KNM-G-0072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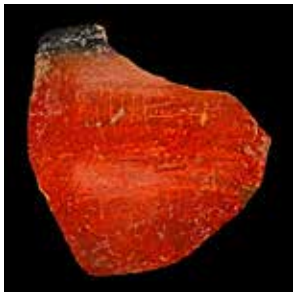
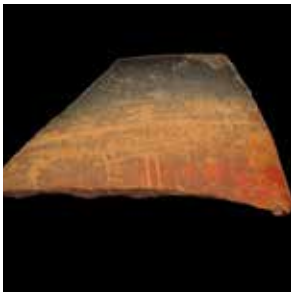

Sign_33.15_PBI-G-0577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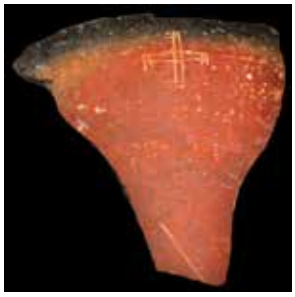
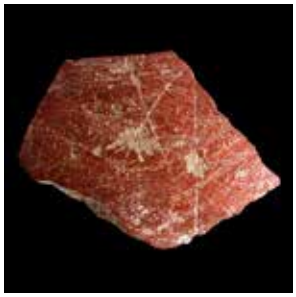

Sign_33.17_PKM-G-0024

Sign No.33-Composites

Plate 5.117

Sign_33.1_ADC_0095

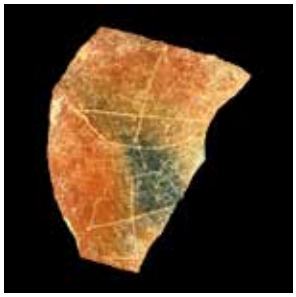
Sign_33.2_KLD_0292


Sign_33.3_KDL_0294

Sign_33.4_KDL_0545

Sign_33.5_KDL_0162

Sign_33.6_KLD_0603


Sign_33.7_KML_0627

Sign_33.8_MGD_0135

Sign_33.9_KLD_0402

Sign_33.10_KNM_0090

Sign_33.11_KNM_0097

Sign_33.12_KNM_0126

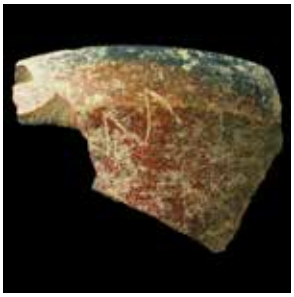
Sign_33.13_TKP_1084(1)

Sign_33.14_SMD_0007

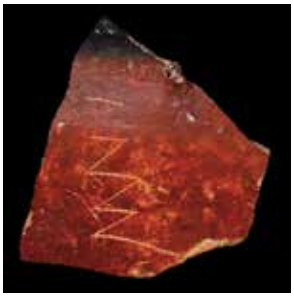
Sign_33.15_MKM_0004

Sign No.34-Base & Variants

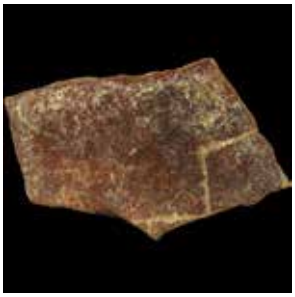
Plate 5.118



Sign_34.0_MGD-G-0087

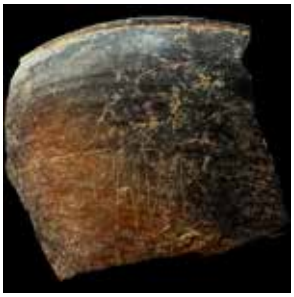


Sign_34.1_KLD_ ASI-G-0364

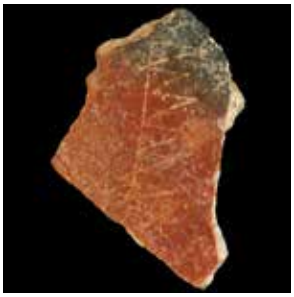


Sign_34.2_TKP-G-0723

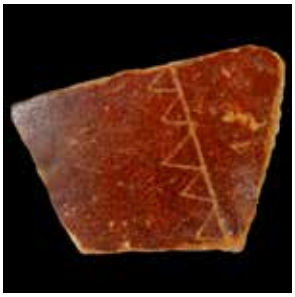
Sign_34.3_TKP-G-1131



Sign_34.4_PPR-G-0400



Sign_34.5_KML_TNS-DA-G-0169



Sign_34.6_NDR-G-0035

Sign No.34-Composites

Plate 5.119

Sign_34.1_V-AGM_0043

Sign_34.2_TKP_1093

Sign_34.3_ADC_0259

Sign_34.4_KLD-ASI_0540

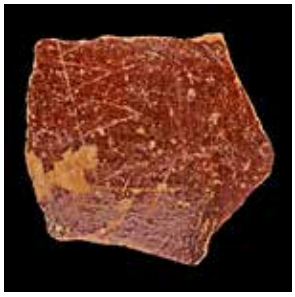
Sign_34.5_PRR_0106

Sign_34.6_KML_0893

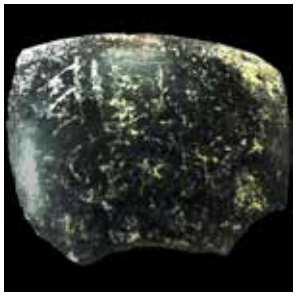
Sign_34.7_KLD-TNS-DA_0602

Sign_34.8_KDL_0519

Sign_34.9_AGM_0210

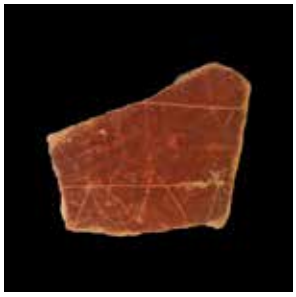

Sign_34.10_PBI_0591

Sign_34.11_KML_0433


Sign_34.12_PRR_038

Sign_34.13_KLD-TNS-DA_0996

Sign_34.14_KDL_0519


Sign_34.15_KML_0177

Sign_34.16_PBI_0187

Sign_34.17_KMD_0006

Sign_34.18_KRR_0073

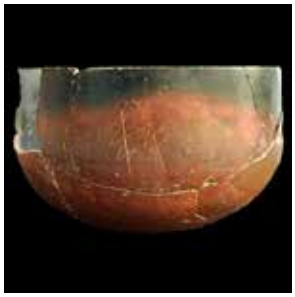
Sign_34.19_PBI_0232

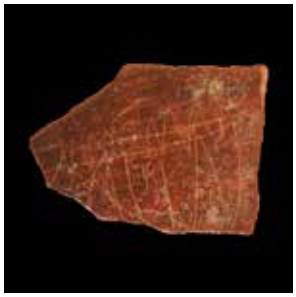
Sign_34.20_KML_1159

Sign No.34-Composites

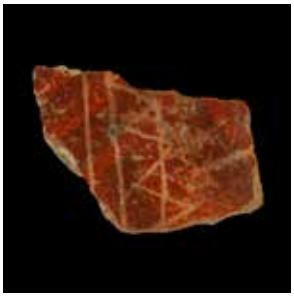
Plate 5.120

Sign_34.21_KLD-TNS-DA_1274


Sign_34.22_KMD_0007


Sign_34.23_KML_0353

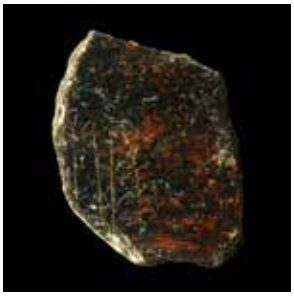
Sign_34.24_KLD-TNS-DA_1068

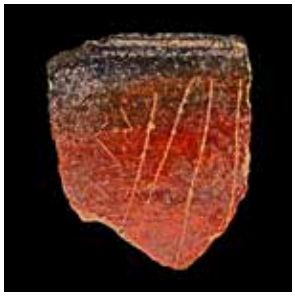

Sign_34.25_KML_1031

Sign_34.26_KML_1407

Sign_34.27_KMD_0075

Sign_34.28_KDL_0148

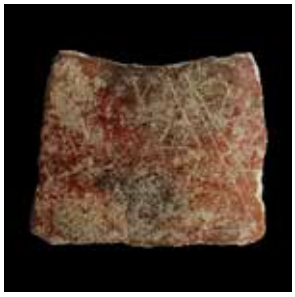

Sign_34.29_KML_1094


Sign_34.30_PBI_0623

Sign_34.31_KNM_0229

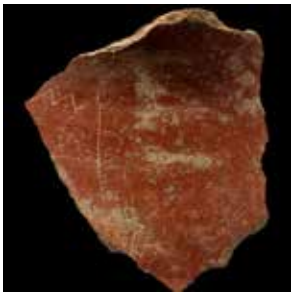
Sign_34.32_ADC_0603

Sign_34.33_KLD-TNS-DA_0626

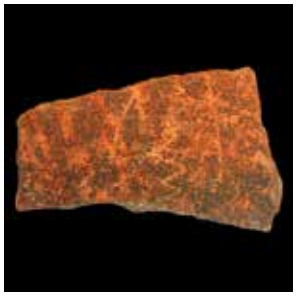

Sign_34.34_KDL_0089

Sign_34.35_NDR_0051

Sign_34.36_KNM_0132


Sign_34.37_PRR_0034

Sign_34.38_0150_PRR

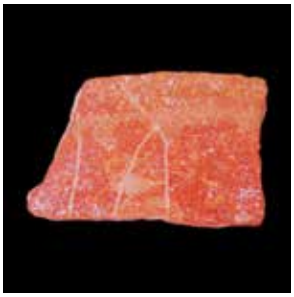

Sign_34.39_KML_0003_

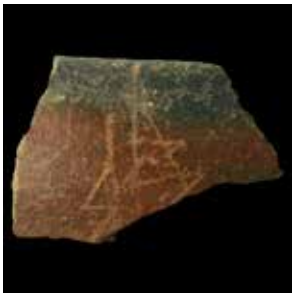
Sign_34.40_KLD-ASI_0363

Sign No.34-Composites

Plate 5.121

Sign_34.41_PB!_0357


Sign_34.42_KLD-TNS-DA_0428_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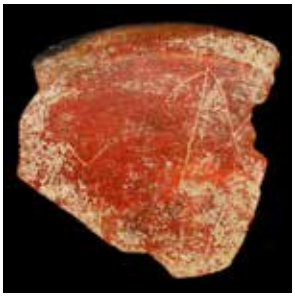
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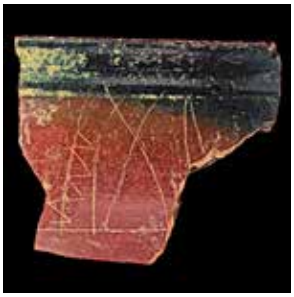
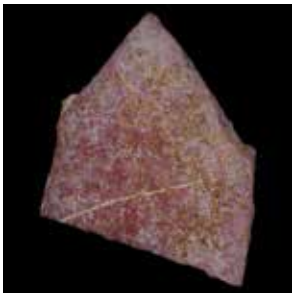
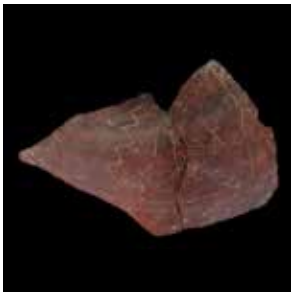
Sign_34.45_KNM_0054

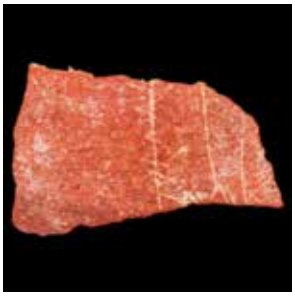

Sign_34.46_PBI_0332


Sign_34.47_ADC_0464

Sign_34.48_KLD-ASI_0596


Sign_34.49_KLD-ASI_0333

Sign_34.50_KNM_0292


Sign_34.51_KLD-TNS-DA_0716

Sign_34.52_PBI_0937

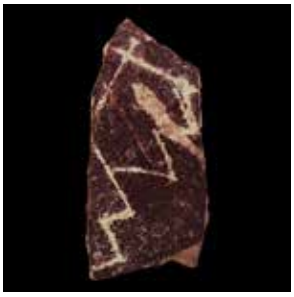
Sign_34.53_NDR_0021

Sign_34.54_PKM_0004

Sign_34.55_TKP_1079

Sign_34.56_TKP_2323

Sign_34.57_TKP_2321

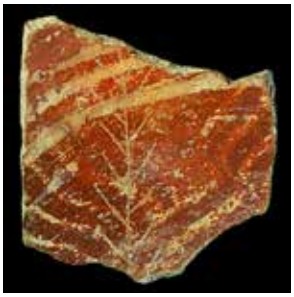

Sign_34.58_KRK_0118

Sign_34.59_TKP_1020

Sign_34.60_KLD-ASI_0143

Sign No.35-Base & Variants

Plate 5.122

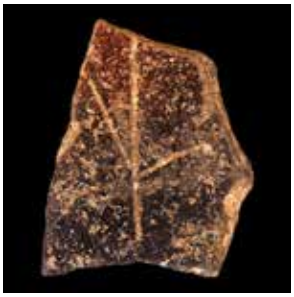

Sign_35.0_KDL_TU-PU-G-0032

Sign_35.1_KDL_TU-PU-G-0241

Sign_35.2_AGM-G-0131

Sign_35.3_KLD_ASI-G-0151

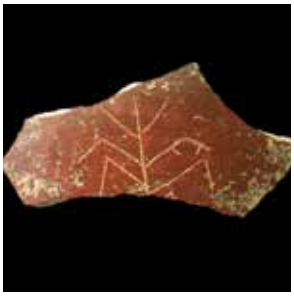
Sign_35.4_TKP-G-0991


Sign_35.5_KLD_ASI-G-0197

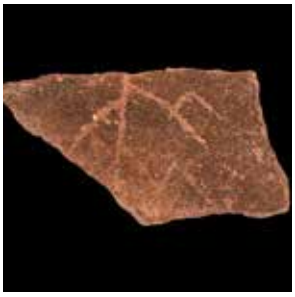
Sign_35.6_TKP-G-2739

Sign_35.7_TKP-G-3585

Sign_35.8_TKP-G-0891


Sign_35.9_MGD-G-0068

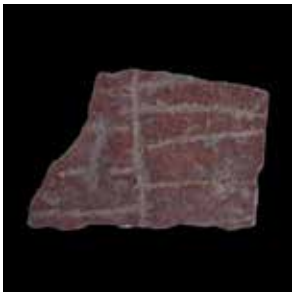
Sign_35.10_TKP-G-1146


Sign_35.11_TKP-G-1172

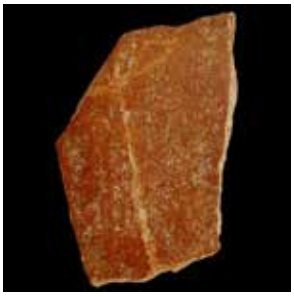
Sign_35.12_TKP-G-1216

Sign_35.13_V.AGM-G-0064

Sign_35.14_AGM-G-0198


Sign_35.15_TKP-G-2597

Sign_35.16_TKP-G-3295

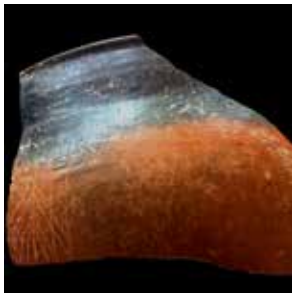

Sign_35.17_V.AGM-G-0230

Sign_35.18_AGM-G-0131

Sign No.35-Composites

Plate 5.123

Sign_35.1_KML_0547


Sign_35.2_PRR_0052

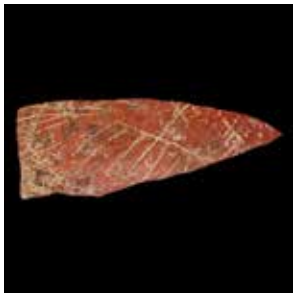
Sign_35.3_KML_1284

Sign_35.4_TKP_0953

Sign_35.5_KML_0271

Sign_35.6_TKP_4578

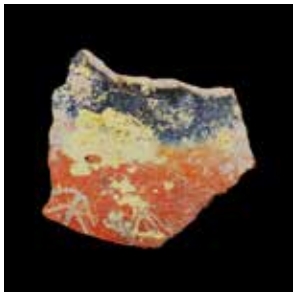
Sign_35.7_KLD_0045


Sign_35.8_KLD-ASI_0129

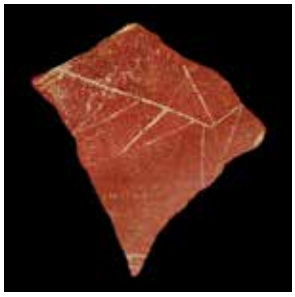
Sign_35.9_KLD-TNS-DA_0026

Sign_35.10_TKP_4578

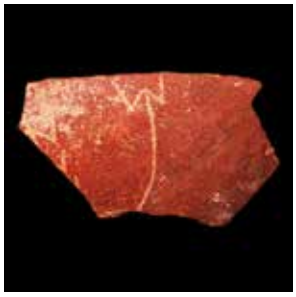
Sign_35.11_KDC_0541

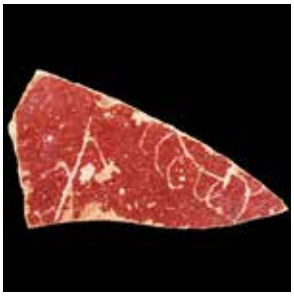

Sign_35.12_KLD-TNS-DA_0724

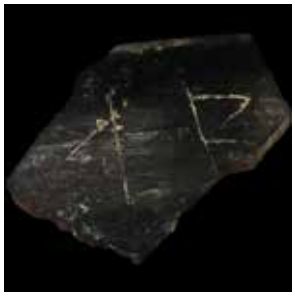
Sign_35.13_NDR_0030


Sign_35.14_KLD-ASI_0626

Sign_35.15_KML_1302


Sign_35.16_KLD-ASI_0628


Sign_35.17_KLD-TNS-DA_0013

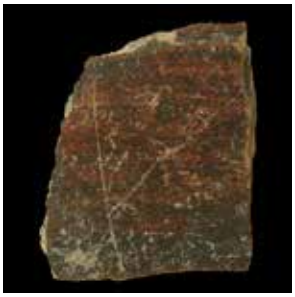

Sign_35.18_0044_PRR

Sign No.36-Base & Variants

Plate 5.124

Sign_36.0_KLD_TNS-DA-G-0957

Sign_36.1_KLD_ASI-G-0605


Sign_36.2_KML-G-0114

Sign_36.3_TKP-G-2045

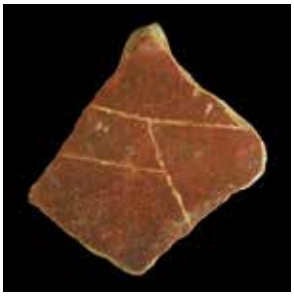
Sign_36.4_TKP-G-241

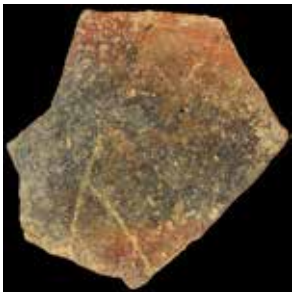
Sign_36.5_V.AGM-G-0116

Sign_36.6_TKP-G-0205

Sign_36.7_ADC-G-0236

Sign_36.8_ADC-G-0117

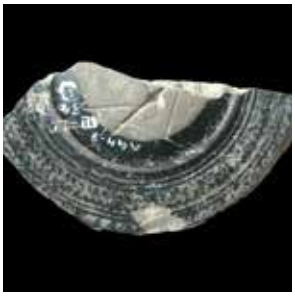

Sign_36.9_KML-G-0373


Sign_36.10_TKP-G-0934

Sign_36.11_TKP-G-3309

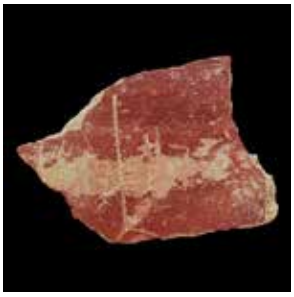
Sign_36.12_TKP-G-0362

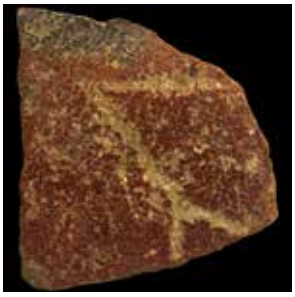
Sign_36.13_KML-G-0017


Sign_36.14_AGM-G-0003

Sign_36.15_TKP-G-0764

Sign_36.16_TKP-G-2208


Sign_36.17_KRK-G-0188

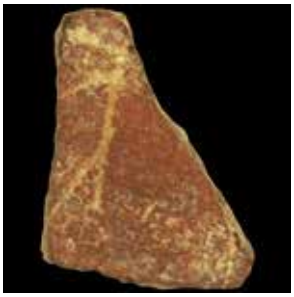

Sign_36.18_TKP-G-0812

Sign_36.19_KRK-G-0265

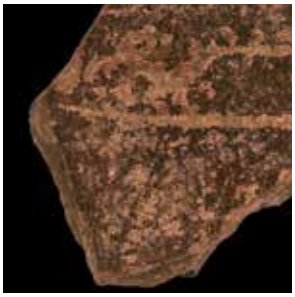
Sign No.36-Base & Variants

Plate 5.125

Sign_36.20_KRK-G-0092



Sign_36.21_TKP-G-0562

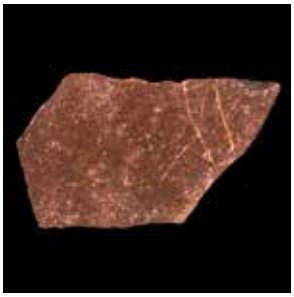


Sign_36.22_TKP-G-1369

Sign_36.23_NDR-G-0041

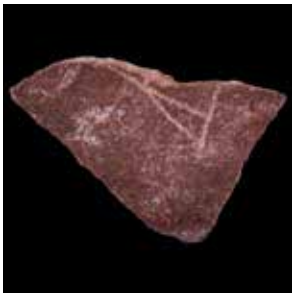
Sign No.36-Composites

Plate 5.126


Sign_36.1_TKP_1315

Sign_36.2_V-AGM_0410

Sign_36.3_PBI_0911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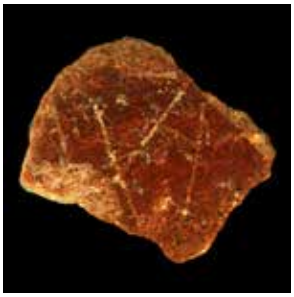
Sign_36.5_ADC_0005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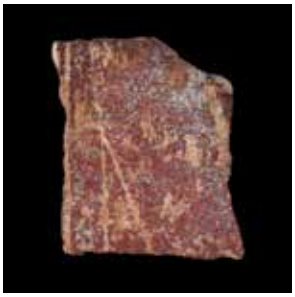

Sign_36.7_ADC_0423

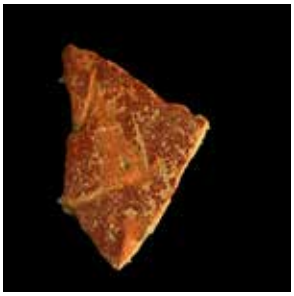
Sign_36.8_ADC_0203

Sign_36.9_ADC_0182

Sign_36.10_KDL_067

Sign_36.11_KLD-ASI_0605

Sign_36.12_KML_0549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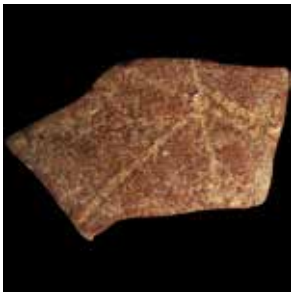
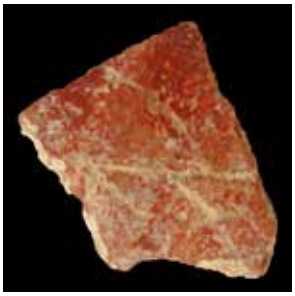

Sign_36.14_TKP_0410

Sign_36.15_ADC_0182


Sign_36.16_KML_0725

Sign_36.17_KML_0584

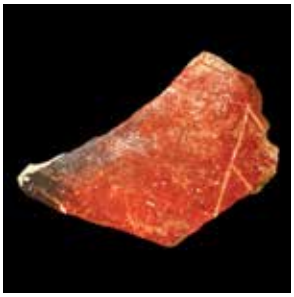
Sign_36.18_ADC_0435

Sign_36.19_KML_0602

Sign_36.20_AGM_0083

Sign No.36-Composites

Plate 5.127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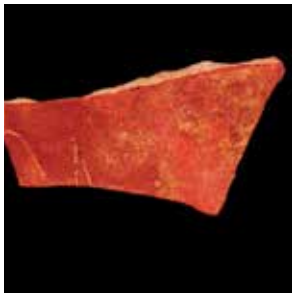
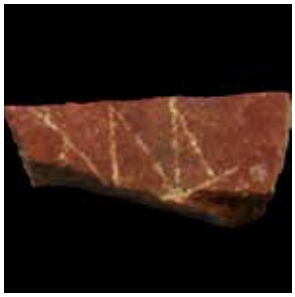
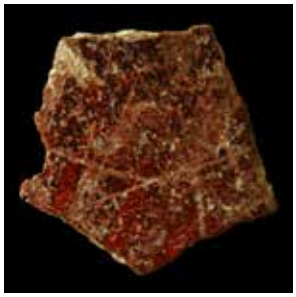

Sign_36.22_KLD-ASI_0746

Sign_36.23_TKP_0004

Sign_36.24_TKP_3134

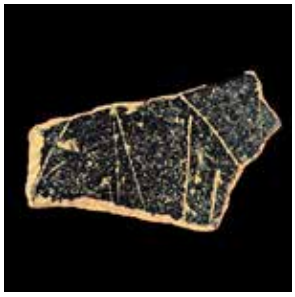
Sign_36.25_TKP_0127


Sign_36.26_PRR_0062


Sign_36.27_KML_1137

Sign_36.28_TKP_4720

Sign_36.29_KLD-ASI_0698


Sign_36.30_PBI_0343

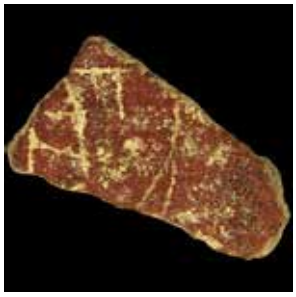
Sign_36.31_TIV_0182

Sign_36.32_ADC_0202

Sign_36.33_AGM_0152

Sign_36.34_MGD_0142_

Sign_36.35_KRK_0128


Sign_36.36_TKP_0605

Sign_36.37_TKP_0232

Sign_36.38_TKP_3218

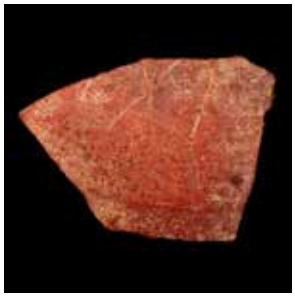
Sign_36.39_KLD-TNS-DA_0418

Sign_36.40_KLD-TNS-DA_0035

Sign No.36-Composites

Plate 5.128

Sign_36.41_MGD_0034


Sign_36.42_KLD-ASI_0356

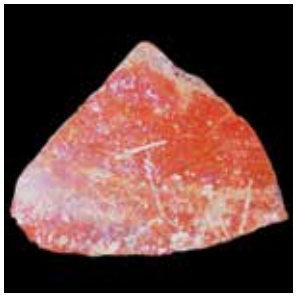
Sign_36.43_KRK_0057

Sign_36.44_SMM_0011

Sign_36.45_TIV_0176

Sign_36.46_TKP_2529

Sign_36.47_MGM_0016


Sign_36.48_KLD-TNS-DA_0721

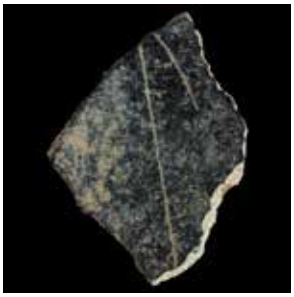
Sign_36.49_TKP_3691

Sign_36.50_TKP_2642

SIgn_36.51_KTM_0006

Sign No.37-Base & Variants

Plate 5.129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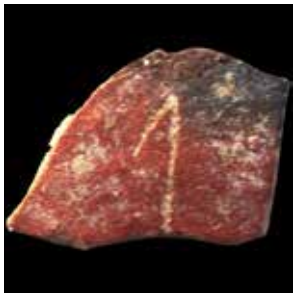
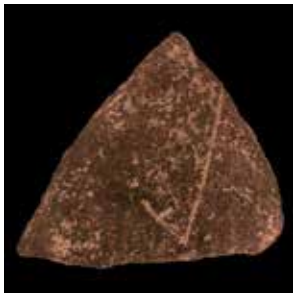
Sign_37.1_KDL-G-0499


Sign_37.2_TKP-G-0189


Sign_37.3_TKP-G-1345

Sign_37.4_TKP-G-0541

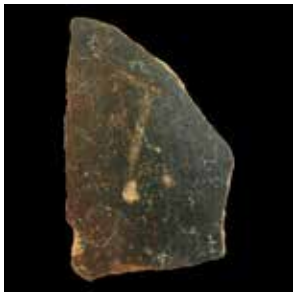
Sign_37.5_ADC-G-0640

Sign_37.6_KDL_TNS-DA-G-0134

Sign_37.7_ADC-G-0179

Sign_37.8_TKP-G-2182

Sign_37.9_ADC-G-0060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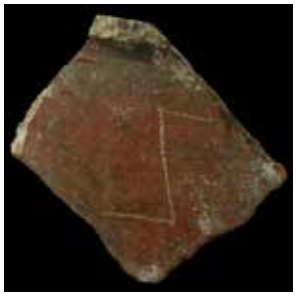
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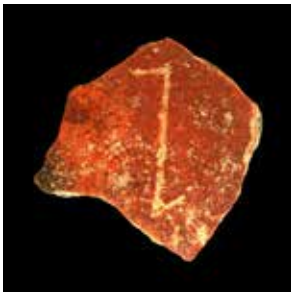
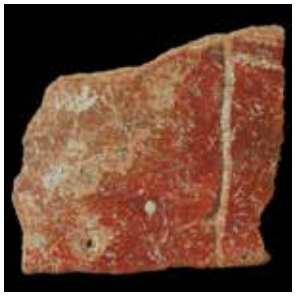

Sign_37.12_KDL_TNS-DA-G-0037

Sign_37.13_KDL_TU-PU-G-0088

Sign_37.14_KDL-G-0023

Sign_37.15_TKP-G-4466

Sign_37.16_TKP-G-0965


Sign_37.17_TIV-G-0170

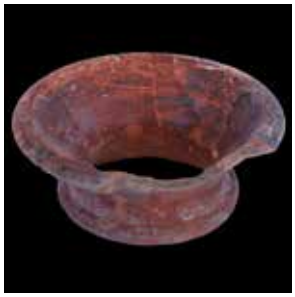
Sign_37.18_TKP-G-4245

Sign_37.19_PBI-G-0504

Sign No.37-Base & Variants

Plate 5.130

Sign_37.20_TKP-G-2389



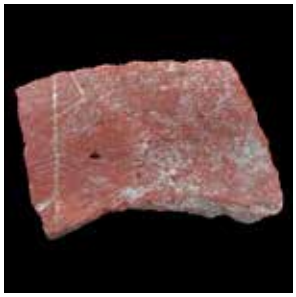
Sign_37.21_KNM-G-0063

Sign_37.22_TKP-G-2922

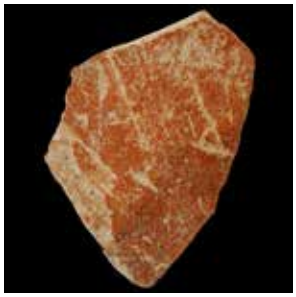
Sign_37.23_TKP-G-3916

Sign_37.24_TKP-G-4021

Sign_37.25_KRR-G-0046



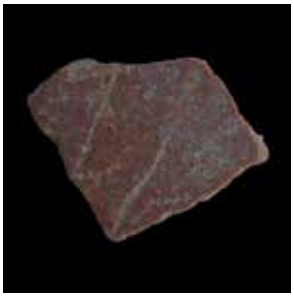
Sign_37.26_AGM-G-0311



Sign_37.27_V.AGM-G-0051

Sign No.37-Composites

Plate 5.131


Sign_37.1_TKP_2712

Sign_37.2_ADC_0783

Sign_37.3_KP_3068

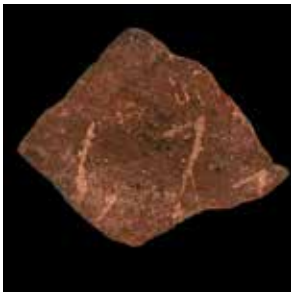
Sign_37.4_ADC_0321

Sign_37.5_ADC_0918

Sign_37.6_KML_0951

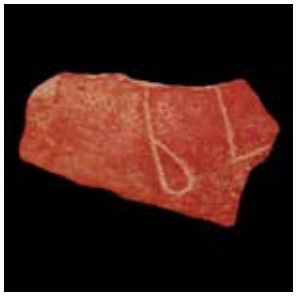
Sign_37.7_KDL_0227

Sign_37.8_KML_0026


Sign_37.9_TKP_1319

Sign_37.10_TKP_2525

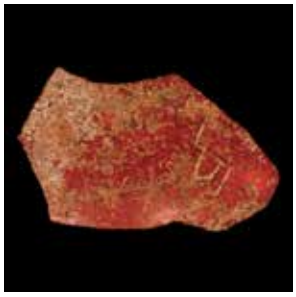
Sign_37.11_KLD_ASI-G-0647


Sign_37.12_KLD_ASI-G-0668

Sign_37.13_KDL_0320

Sign_37.14_KLD-TNS-DA_0637

Sign_37.15_KRK_0421


Sign_37.16C_KLD_ASI-G-0353

Sign_37.17_TKP_0517

Sign_37.18_KML_0521

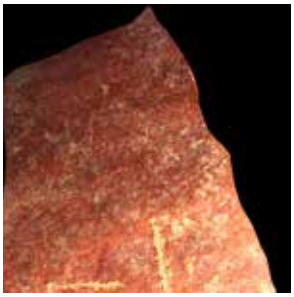
Sign_37.19_KML_1240

Sign_37.20_AGM_0306

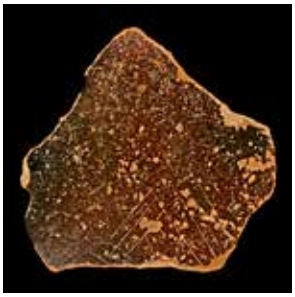
Sign No.37-Composites

Plate 5.132

Sign_37.21_PMR_0013


Sign_37.22_TKP_0376

Sign_37.23_TKP_3346


Sign_37.24_PBI_0879_

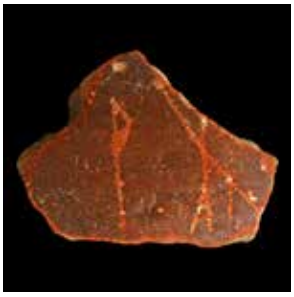
Sign_37.25_ADC_0812

Sign_37.26_Sulur_0001

Sign_37.27_SGI-G-0021

Sign_37.28_AGM_0070

Sign_37.29_SGI_0108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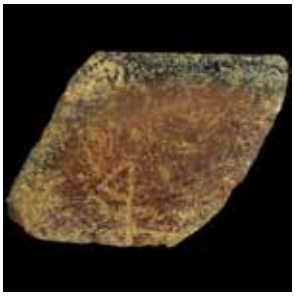
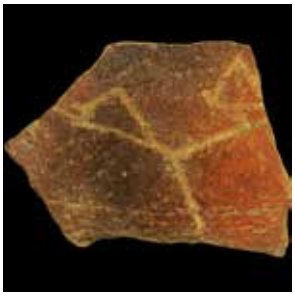
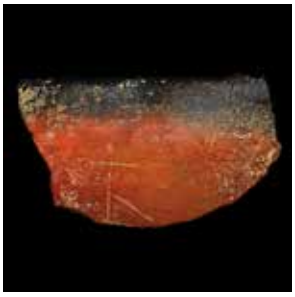
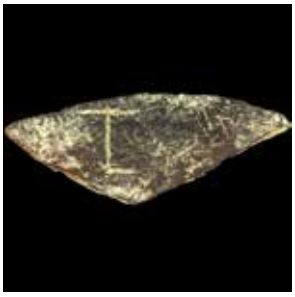

Sign_37.31_TKP_0492


Sign_37.32_TKP_0551

Sign_37.33_TKP_0620

Sign_37.34_TKP_0909


Sign_37.35_KLD-ASI_0092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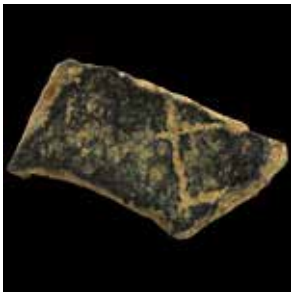
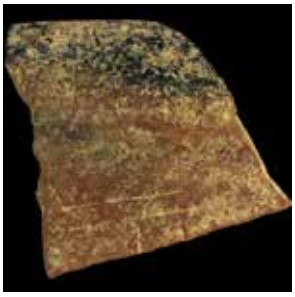

Sign_37.37_TKP_0828

Sign_37.38_KDL_0137

Sign_37.39_KRR_0181

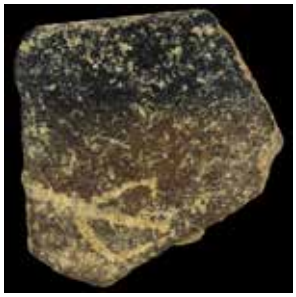

Sign_37.40_TKP_0484

Sign No.38-Base & Variants

Plate 5.133

Sign_38.0_KDL_TU-PU-G-0068

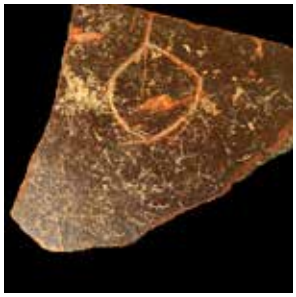
Sign_38.1_TKP-G-3111


Sign_38.2_TKP-G-0772

Sign_38.3_KLD_ASI-G-0622

Sign_38.4_KDL_TU-PU-G-0067

Sign_38.5_TKP-G-0563


Sign_38.6_KML_TNS-DA-G-0683

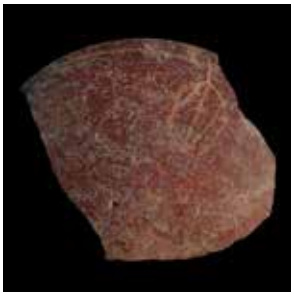
Sign_38.7_KML_TNS-DA-G-0664

Sign_38.8_TKP-G-0779

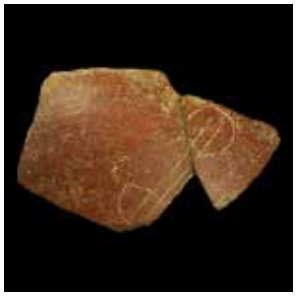
Sign_38.9_TKP-G-1042

Sign_38.10_ADC-G-0023

Sign_38.11_KLD-TNS-DA-G-1205


Sign_38.12_TKP-G-2518

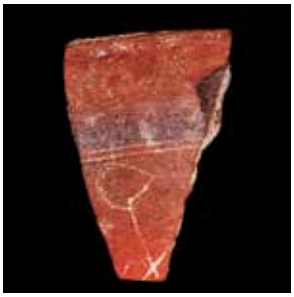
Sign_38.13_AGM-G-0194


Sign_38.14_KDL_TU-PU-G-0069

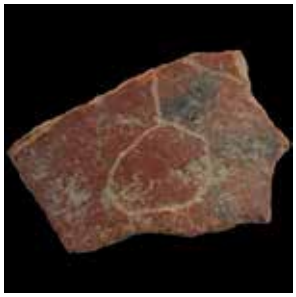
Sign_38.15_V.AGM-G-0094

Sign No.38-Composites

Plate 5.134


Sign_38.1_KLD-ASI_0612

Sign_38.2_TKP_4214


Sign_38.03_TKP_3103

Sign_38.4_TKP_2759

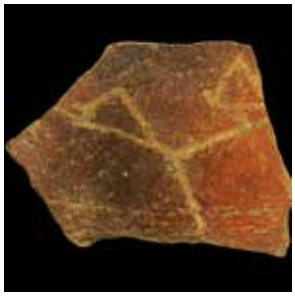
Sign_38.5_KML_0449

Sign_38.6_TKP_3743

Sign_38.7_CHTM_003

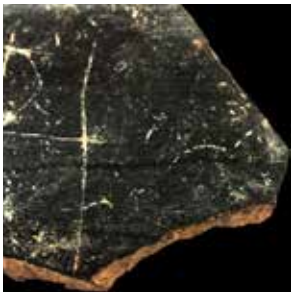
Sign_38.8_KML_1065

Sign_38.9_1244_KML


Sign_38.10_TKP_0551

Sign_38.11_KLD_ASI_0482

Sign_38.12_PRR_0232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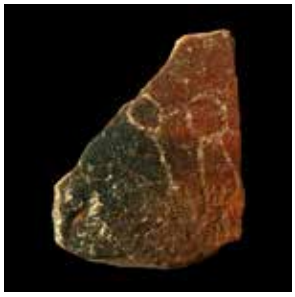
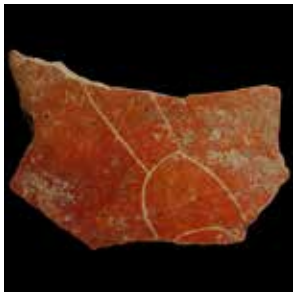

Sign_38.14_KML_0899

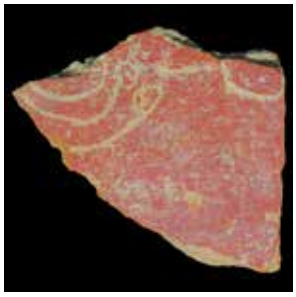
Sign_38.15_V-AG_0235


Sign_38.16_V-AGM_0406

Sign_38.17_KDL_0264

Sign_38.18_KML_0902

Sign_38.19_KDL_0122


Sign_38.20_KLD-TNS-DA_0891

Sign No.38-Composites

Plate 5.135

Sign_38.21_KDL-0338

Sign_38.22_ADC_0204

Sign No.39-Base & Variants

Plate 5.136

Sign_39.0_V-AGM-G-0238

Sign_39.1_KDL_TNS-DA-G-0695

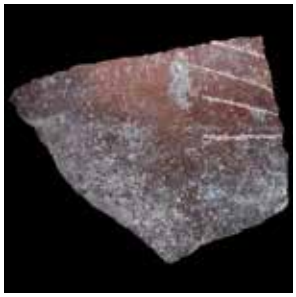
Sign_39.2_KMD-G-0038

Sign_39.3_TKP-G-1310

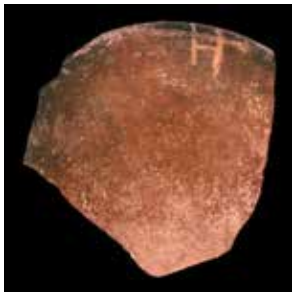
Sign_39.4_ARM-G-0004

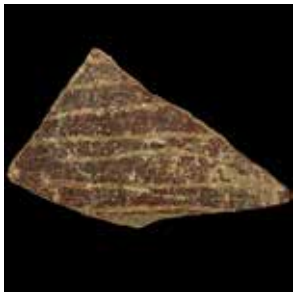
Sign_39.5_PBI-G-0153

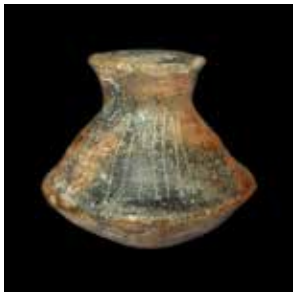
Sign_39.6_PPR-G-0306


Sign_39.7_AGM-G-0246

Sign_39.8_KDL_TNS-DA-G-1160

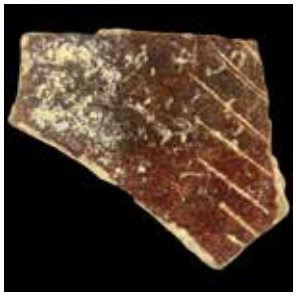

Sign_39.9_TKP-G-1202

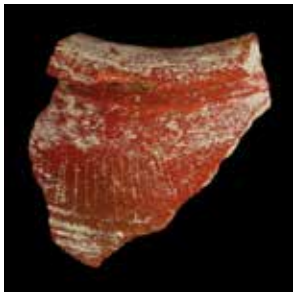

Sign_39.10_TKP-G-0844

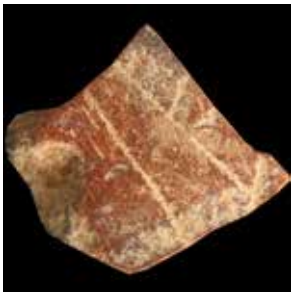

Sign_39.11_Elavama-lai-G-0001

Sign_39.12_PMR-G-0039

Sign_39.13_TRK-G-0009


Sign_39.14_TKP-G-0785


Sign_39.15_KLD-ASI-G-0476

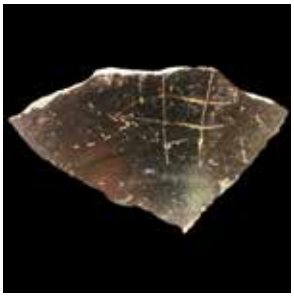

Sign_39.16_TKP-G-0160

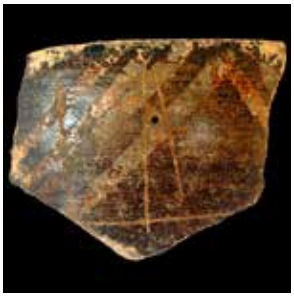
Sign_39.17_KML-G-0469

Sign_39.18_TKP-G-0661

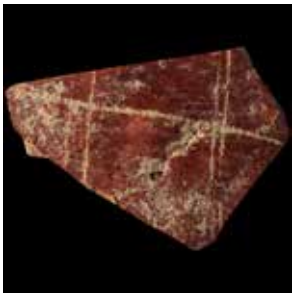
Sign No.39-Composites

Plate 5.137


Sign_39.1_PRR_0004


Sign_39.2_NDR_0043

Sign_39.3_TKP_0610

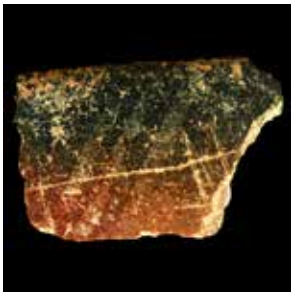

Sign_39.4_TKP_0438

Sign_39.5_TKP_2592

Sign_39.6_TKP_3728

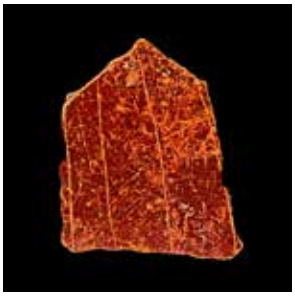
Sign_39.7_KRK_0008

Sign_39.8_PBI_0131


Sign_39.9_KML_0732

Sign_39.10_TIV_0160

Sign_39.11_SGI_0058

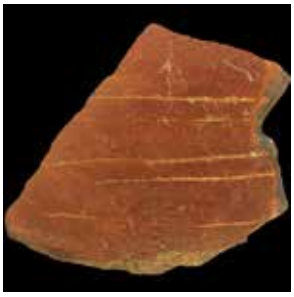

Sign_39.12_0621_PBI

Sign_39.13_KLD-TNS-DA_1329

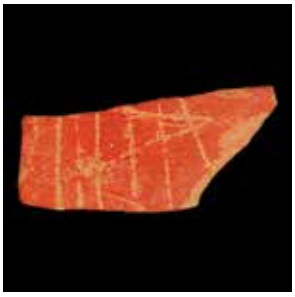
Sign_39.14_TKP_0749

Sign_39.15_KLD-ASI_0502

Sign_39.16_PBI_0874


Sign_39.17_TKP_0452

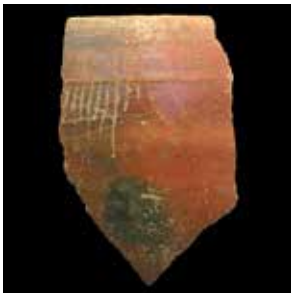
Sign_39.18_KDL_0361


Sign_39.19_KLD-ASI_0585

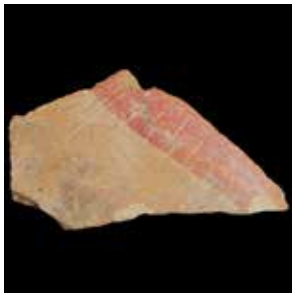
Sign_39.20_TKP_2266

Sign No.39-Composites

Plate 5.138



Sign_39.21_Tirukampuli-yur_0007



Sign_39.22_KLD-TNS-DA_0914

Sign No.40-Base & Variants

Plate 5.139

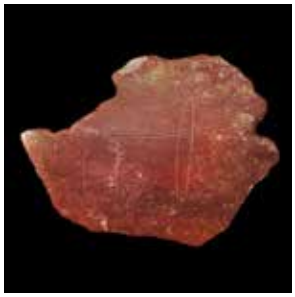
Sign_40.0_KLD_TNS-DA-G-0669

Sign_40.1_KLD_TNS-DA-G-0620

Sign No.40-Composites

Plate 5.140

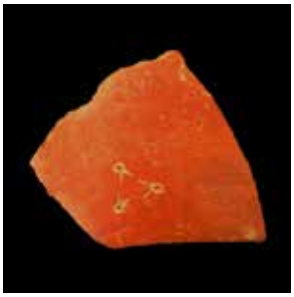
Sign_40.1_V-AGM_0235



Sign_40.2_KLD_0655

Sign_40.3_Tirukampuli-yur_0001

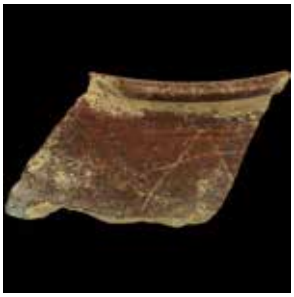
Sign_40.4_KDL_0024



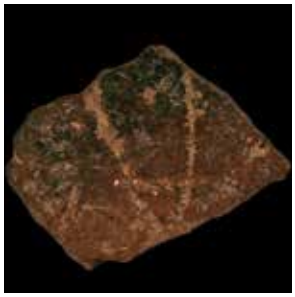
Sign_40.5_KDL_0044

Sign No.41-Base & Variants

Plate 5.141

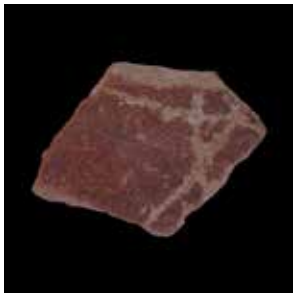


Sign_41.0_TKP-G-0722

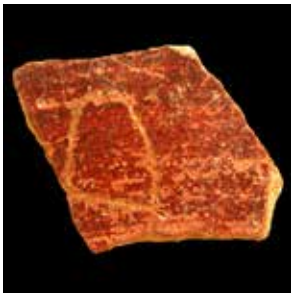


Sign_41.1_TKP-G-1738

Sign_41.2_PRR-G-0045

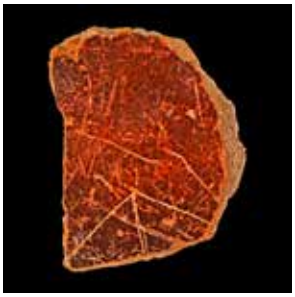


Sign_41.3_TKP-G-2802

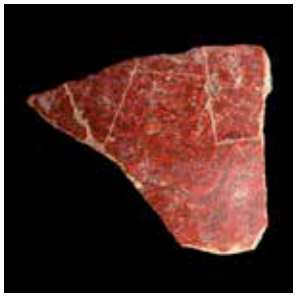


Sign_41.4_TKP-G-0787

Sign_41.5_KLD-TS-DA-G-1280



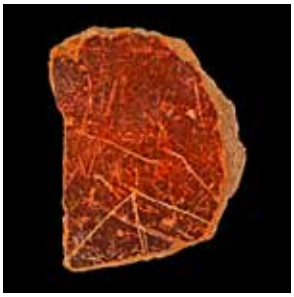
Sign_41.6_PBI-G-0514



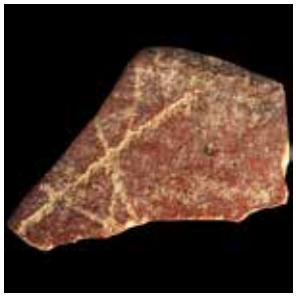
Sign_41.7_KDL-G-0412

Sign No.41-Composites

Plate 5.142


Sign_41.1_PBI_0514

Sign_41.2_ADC_01531


Sign_41.3_TKP_0400

Sign_41.4_PBI_0270

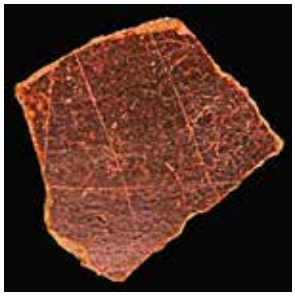
Sign_41.5_TKP_0747

Sign_41.6_PBI_0431

Sign_41.7_KML_0136_

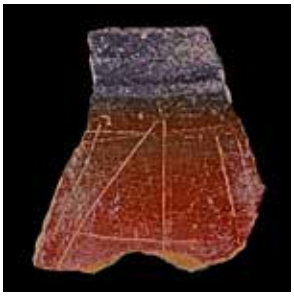
Sign_41.8_PBI_0616

Sign_41.9_PBI_0463


Sign_41.10_PBI_0464

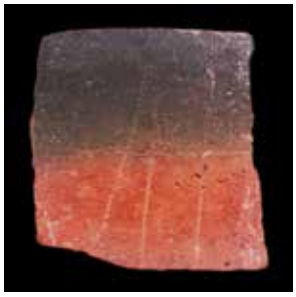
Sign_41.11_KLD-ASI_0762

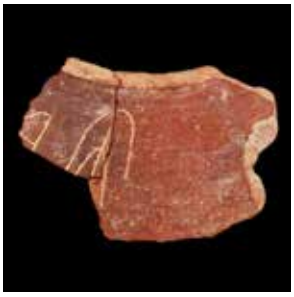
Sign_41.12_KML_0141


Sign_41.13_PBI_0173

Sign_41.14_AGM_0261

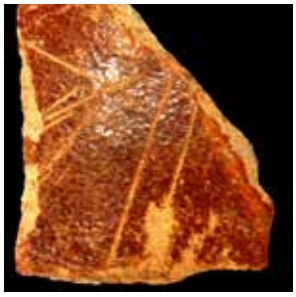
Sign_41.15_MGD_0124


Sign_41.16_KLD-TNS-DA_0677


Sign_41.17_KLD-ASI_0528

Sign_41.18_KML_0307

Sign_41.19_TKP_0246


Sign_41.20_NDR_0031

Sign No.42-Base & Variants

Plate 5.143

Sign_42.0_KDL_TU-PU-G-0065

Sign_42.1_KDL_TU-PU-G-0070

Sign_42.2_KLD_ ASI-G-0370

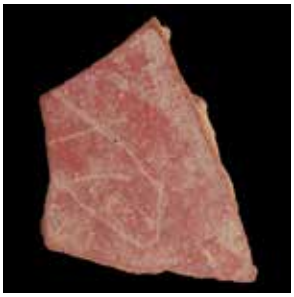
Sign_42.3_KLD_ ASI-G-0104

Sign_42.4_KLD_ ASI-G-0722

Sign_42.5_KLD_TNS-DA-G-0638

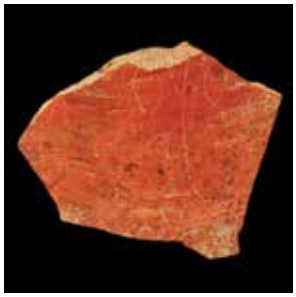
Sign No.42-Composites

Plate 5.144



Sign_42.1_KLD-TNS-DA_1327

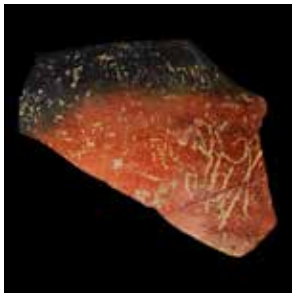
Sign_42.2_TKP_3064



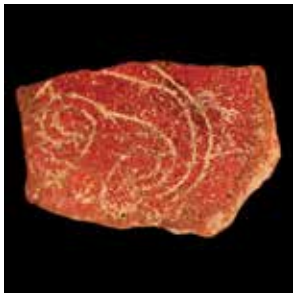
Sign_42.3_KLD-TNS-DA_0744

Sign_42.4_KLD-TNS-DA_0114

Sign_42.5_KLD-ASI_0106



Sign_42.6_KLD-ASI_0005



Sign_42.7_KLD-ASI_0284

Sign_42.8_KLD-TNS-DA_0618

Field Signs

Plate 5.145

Sign_43.0_KDL_TU-PU-G-0008

Sign_44.0_KLD_ASI-G-0472

Sign_45.0_KLD_ASI-G-0487

Sign_46.0_TIV-G-0030

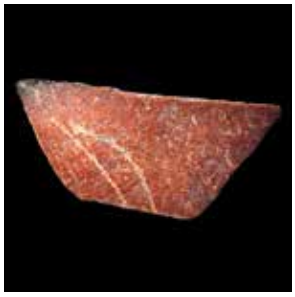
Sign_47.0_KLD_ASI_0683

Sign_48.0_KLD_TNS-DA-G-0243

Sign_49.0_KLD_ASI-G-0487

Sign_50.0_TIV-G-0046

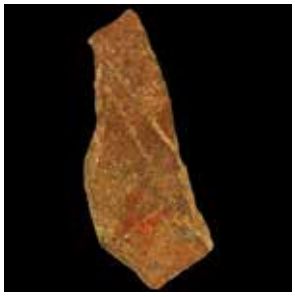
Sign_51.0_TKP-G-0108


Sign_52.0_TKP-G-4186

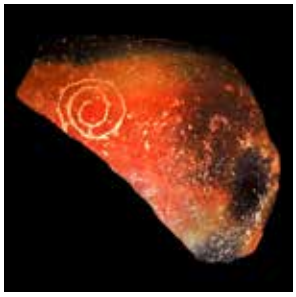
Sign_53.0_TKP-G-0063

Sign_54.0_KLD-TNS-DA-G-0663

Sign_55.0_TIV-G-0008


Sign_56.0_TKP-G-0528

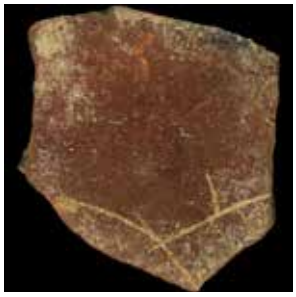
Sign_57.0_KDL_TU-PU-G-0515


Sign_58.0_KLD_ASI-G-0079

Sign_59.0_KLD_ASI-G-0437

Sign_60.0_TKP-G-0875

Sign_61.0_KLD_ASI-G-0775


Sign_62.0_TKP-G-0714

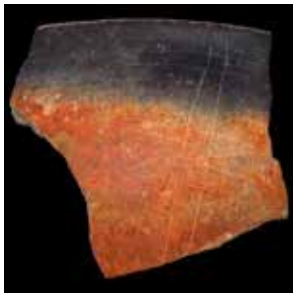
Field Signs

Plate 5.146

Sign_63.0_TKP_0914

Sign_64.0_PKM-G-0009

Sign_65.0_KLD_ ASI-G-0472

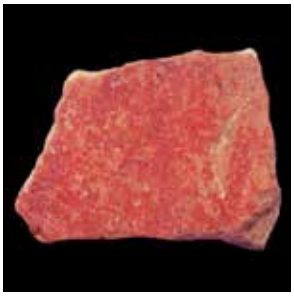

Sign_66.0_PKM-G-0010

Sign_67.0_KLD_ ASI-G-0136

Sign_68.0_KLD_ ASI-G-0138

Sign_69.0_AGM-G-0074

Sign_70.0_AGM-G-0366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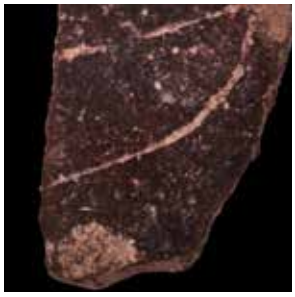
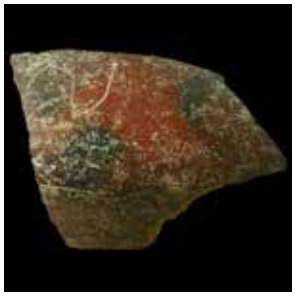

Sign_72.0_TKP-G-4683

Sign_73.0_NDR-G-0034

Sign_74.0_KLD_ ASI-G-0279

Sign_75.0_PMR_0015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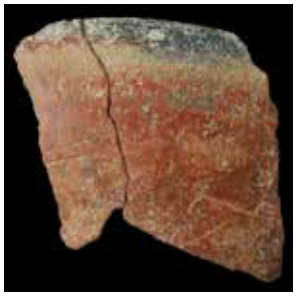
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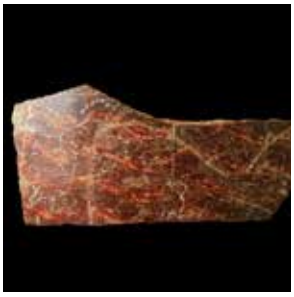
Sign_78.0_KML_0508


Sign_79.0_KML_1073

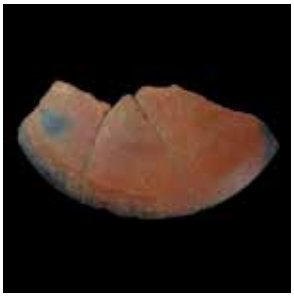
Sign_80.0_V.AGM-G-0235

Sign_81.0_KLD_-ASI_0487

Sign_82.0_ADC-G-0017

Field Signs

Plate 5.147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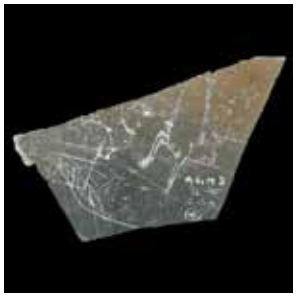
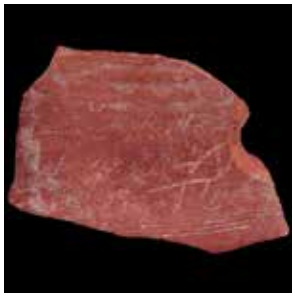
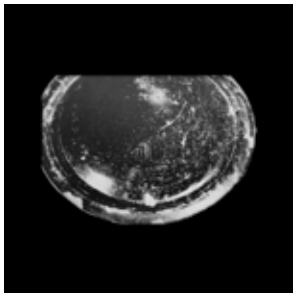
Sign_84.0_ADC_0083

Sign_85.0_AGM_0007


Sign_86.0_AGM_0008(1)

Sign_87.0_AGM_0008_02


Sign_88.0_AGM_0020


Sign_89.0_Coim-batore-G-0001

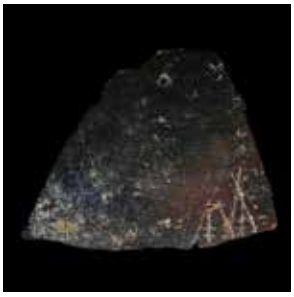
Sign_90.0_KDL_0027

Sign_91.0_KLD_-ASI_0020

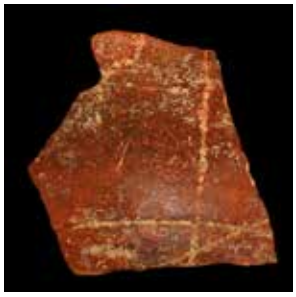
Sign_92.0_KLD-ASI_0189

Sign_93.0_KLD-ASI_0195

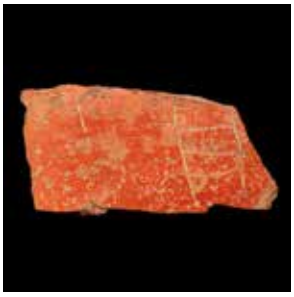
Sign_94.0_KLD-ASI_0208


Sign_95.0_KLD-ASI_0211

Sign_96.0_KLD-ASI_0221


Sign_97.0_KLD-ASI_0226

Sign_98.0_KLD-ASI_0241


Sign_99.0_KLD-ASI_0247

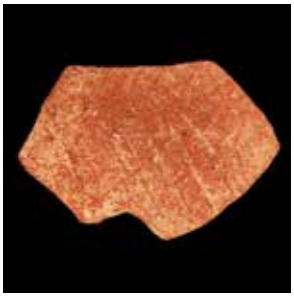
Sign_100.0_KLD-ASI__0248

Sign_101.0_KLD-ASI_0627

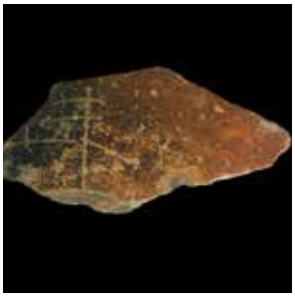
Sign_102.0_KLD-ASI_0652

Field Signs

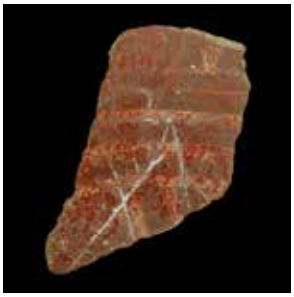
Plate 5.148


Sign_103.0_KLD-ASI_0728

Sign_104.0_KLD-ASI_0738

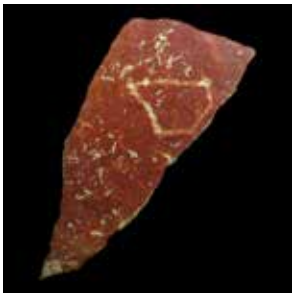

Sign_105_KML_0139

Sign_106.0_KML_0198

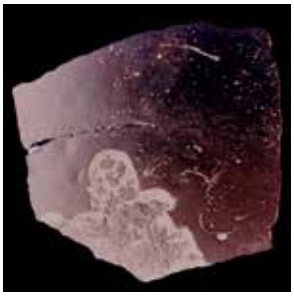

Sign_107.0_1275_KML

Sign_108.0_KRR_0042

Sign_109.0_KRK_0412

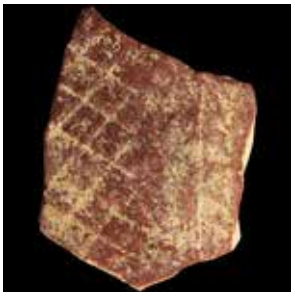

Sign_110.0_MGD_0033

Sign_111.0_MGD_0053


Sign_112.0_SGI(VPT)_0008

Sign_113.0_TKP_0141

Sign_114.0_TKP_0375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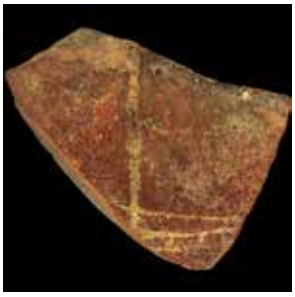
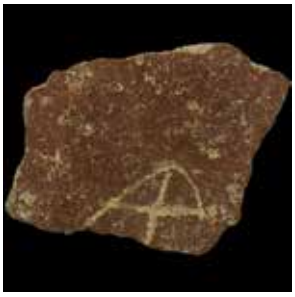
Sign_116.0_KLD-TNS-DA_0658


Sign_117.0_TKP_0713


Sign_118.0_TKP_0837

Sign_119_TKP_0875

Sign_120.0_TKP_0892

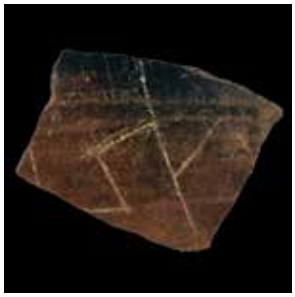
Sign_121.0_TKP_0914

Sign_122.0_TKP_1037

Field Signs

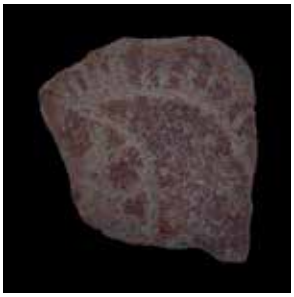
Plate 5.149

Sign_123.0_TKP_1052


Sign_124.0_TKP_1053_

Sign_125.0_TKP_1082

Sign_126.0_TKP_1084 (2)


Sign_127.0_TKP_2385

Sign_128.0_TKP_2410

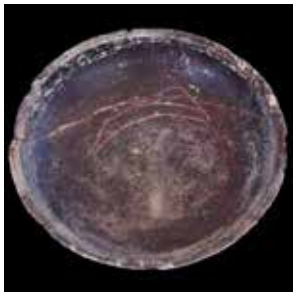
Sign_129.0_TKP_2508

Sign_130.0_TKP_2540

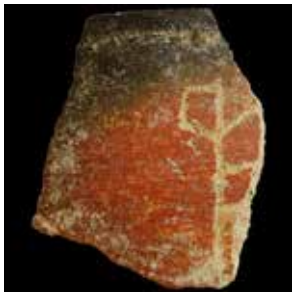
Sign_131.0_TKP_2546

Sign_132_TKP_2551

Sign_133.0_TKP_2775


Sign_134.0_TIV-G-0086

Sign_135.0_TKP_3133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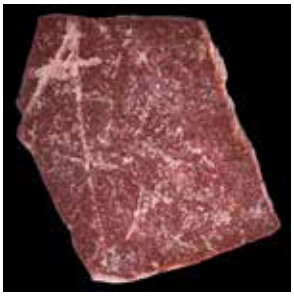
Sign_137_TKP_3354

Sign_138.0_TKP_3680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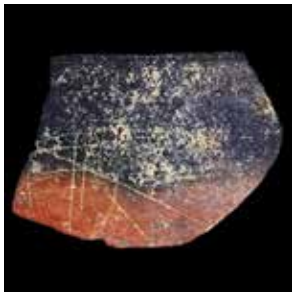
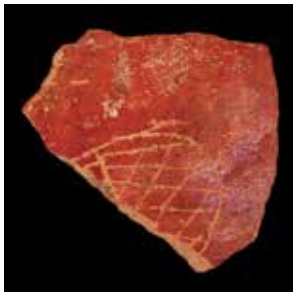

Sign_140.0_KLD_0050

Sign_141.0_KLD_0373


Sign_142.0_KLD_0401

Field Signs

Plate 5.150

Sign_143.0_KLD_0477

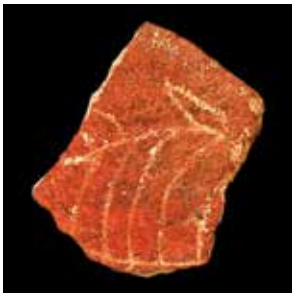
Sign_144.0_KLD_0515

Sign_145.0_KLD_0554

Sign_146.0_KLD_0607

Sign_147.0_KLD_0631

Sign_148.0_KLD_0676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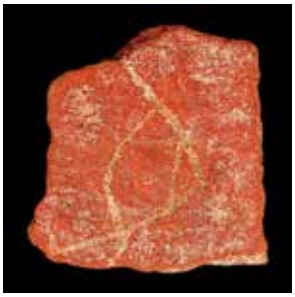
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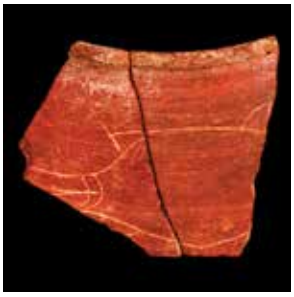
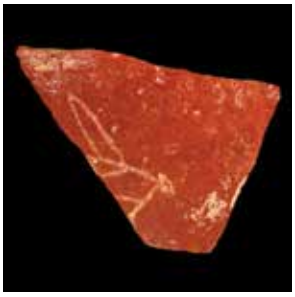

Sign_151.0_KLD_0679

Sign_152.0_KLD_0680

Sign_153.0_KLD-ASI_0681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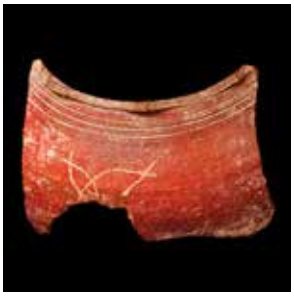
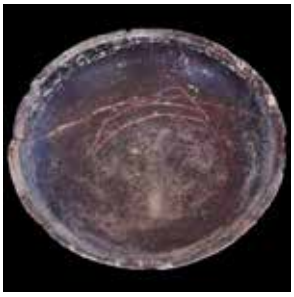

Sign_155.0_KLD-ASI_0707

Sign_156.0_KLD_-ASI_0742

Sign_157_KNM_0023

Sign_158_KNM_0034


Sign_159_KNM_0086

Sign_160_KNM_0109

Sign_161_KNM_0214

Sign_162_KNM_0259

Field Signs

Plate 5.151

Sign_163_KNM_0283

Sign_164_KNM_0291

Sign_165_KRR_0076

Sign_166_KRR_0151

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DEPARTMENT OF ARCHAEOLOGY

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